

Dredging Operations and Environmental Research Program

# Soil Separation Mobile Treatment Plant Demonstration, Bayport Confined Disposal Facility, Green Bay, Wisconsin

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#### Final report

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# **Dredging: Innovative Technology**

Soil Separation Mobile Treatment Plant Demonstration, Bayport Confined Disposal Facility, Green Bay, Wisconsin (ERDC/EL TR-02-38)

**ISSUE:** Confined disposal facilities (CDFs) have historically been used for disposal of both clean and contaminated dredged material from navigational dredging projects. Many CDFs are nearing capacity. Removal of uncomtaminated materials from the CDFs is a viable option for extending the life of these facilities. This approach carries the additional benefit of producing a marketable product for beneficial uses, which can potentially help to offset the cost of processing.

**RESEARCH:** The feasibility of physical separation as a volume reduction method has been demonstrated at several disposal facilities. A guidance document addressing principles of physical separation as they apply to soils and sediments, and identifying standard equipment, selection criteria, and potential sources was recently completed. Technical notes addressing recovery of materials from CDFs were also published under the Dredging Operations and Environmental Research (DOER) program. Work is ongoing at the U.S. Army Engineer Research and Development Center, funded under the DOER program, to develop bench-scale methods for economical preliminary feasibility evaluations.

**SUMMARY:** Preprocessing and separation equipment were tested in a one-day demonstration at Green Bay, WI. A 24-in. (0.6-m) maximum

density separator was used to separate sand from the bulk sediment. The target sand product specifications were less than 10 percent fines by mass and polychlorinated biphenyls (PCBs) concentrations less than 1 mg/kg. The underflow fraction averaged over 92 percent sand, as measured by a Coulter Counter. PCBs were reduced to 0.144 mg/kg PCB 1242 and 0.0119 mg/kg PCB 1260 in the sand, from 2.71 mg/kg and 0.145 mg/kg in the feed material, respectively. Based on statistical analysis of the results, the contaminant concentrations predicted for the sand fraction by the bench-scale testing were essentially equivalent to that achieved in the field operation. Distribution of metals was somewhat more variable than for PCBs, but metals were reduced by a factor of 2.6 to an order of magnitude in the sand fraction.

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# **Preface**

This report summarizes the evaluation of a special hydrocyclone configuration (the maximum density separator) for physical separation of sediments, and corresponding efforts to develop simplified, representative, bench-scale procedures for preliminary testing. This project was jointly funded by the U.S. Environmental Protection Agency Great Lakes National Program Office (GLNPO), GLNPO Identification No. GL98079, IAG 14947887-01, and the U.S. Army Corps of Engineers Dredging Operations and Environmental Research (DOER) Program under Work Unit 0054PD.

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# 1 Introduction

## **Background**

Confined disposal facilities (CDFs) have historically been used for disposal of both clean and contaminated dredged material from navigational dredging projects where open-water disposal was not permitted. Many CDFs are nearing capacity. Removal of uncontaminated materials from the CDFs is a viable option for extending the life of these facilities. This approach carries the additional benefit of producing a marketable product for beneficial uses, which can potentially help to offset the cost of processing. Use of CDFs as rehandling facilities, with long-term storage for only the most contaminated sediments, is being investigated by the U.S. Army Engineer Research and Development Center (ERDC), in partnership with the U.S. Army Engineer District, Detroit, the Great Lakes National Program Office (GLNPO) of the U.S. Environmental Protection Agency (USEPA), and local port authorities.

The feasibility of physical separation as a volume reduction method has been demonstrated at Saginaw Bay (USEPA 1994), the Erie Pier CDF, Duluth/ Superior Harbor (Olin and Bowman 1996) and Fort Myers, Florida (Granat 1998). Despite successful demonstrations at these locations and continued interest in the technology, physical separation has not yet been implemented as a standard operational practice, with the exception of the Erie Pier CDF. In part, this is due to the lack of internal expertise regarding physical separation and feasibility determinations, the cost of feasibility evaluations, and equipment availability.

A guidance document addressing principles of physical separation as they apply to soils and sediments, and identifying standard equipment, selection criteria, and potential sources was completed (USEPA 1999b). Technical notes addressing recovery of materials from CDFs were also completed under the Dredging Operations and Environmental Research (DOER) program (Olin-Estes and Palermo 2000a,b; Olin-Estes 2000). Work is ongoing at ERDC, funded under the DOER program, to develop bench-scale methods for economical preliminary feasibility evaluations. While bench-scale testing is a necessary first step, the limited volume of material that can be tested with these procedures cannot provide information regarding the potential heterogeneities of large quantities of material. Industry practice is to follow bench-scale testing with evaluation of an intermediate volume of material using a representative unit operation, such as a hydrocyclone. If these results are promising, a preliminary

treatment train is assembled and pilot-scale testing is conducted in the field. Costs to contract intermediate and pilot testing are typically high given that mobilization/demobilization and equipment costs are relatively insensitive to the volume being processed, and most vendors cannot accept contaminated sediments for pilot testing in-house. Availability of a mobile hydrocyclone unit could result in significant cost savings for feasibility evaluations and small-scale projects, and ultimately facilitate full-scale implementation of this technology. The long-term goal is assemble a mobile physical separation plant suitable for separation of sediments and dredged material to serve the Great Lakes CDFs.

Questions remaining to be addressed before full-scale implementation is feasible include the following:

- a. The degree of bulking of residual materials, with and without flocculants, and the short- and long-term effects on CDF capacity recovery.
- b. Alternatives for dewatering residual materials to minimize bulking effects, and their cost, effectiveness, and effect on suitability of residual materials for beneficial uses.
- c. The relative benefit and feasibility of making finer separations (silt/clay) to recover additional material from CDFs.
- d. Evaluation procedures for determining the potential contaminant levels in fine residuals and the effect on the regulatory classification of these materials.
- e. Development of cost/benefit algorithms incorporating all of these considerations for economic feasibility evaluations.

### **Project Objectives**

Identification and purchase of a portable hydrocyclone unit suitable for conducting separation feasibility evaluations and a small-scale field demonstration was the principal objective of this project. While the predominant focus is coarse material recovery for beneficial use as beach nourishment and construction fill (typically requiring the material to contain less than 10-15 percent fines), some beneficial uses will accommodate higher percentages of fine material. The silt/clay separation is expected to be an important long-range objective in maximizing material recovery from CDFs for material in which the silt fraction is substantially less contaminated than the clay fraction. Separation capability at the sand/silt interface (approximately 75 microns) with the additional capability of a silt/clay separation (at 2-3 microns) were therefore the principal operating specifications. Additional criteria were (a) level of expertise required for operation, (b) auxiliary equipment required to support operation, and (c) material preparation required. The equipment may also be used to address other information gaps, as previously described.

# Identification of Available Equipment Types and Vendors

A wide variety of equipment is marketed for size and density separations within the mining industry. However, the equipment is typically designed for coarser and higher density materials. Although there is a significant body of knowledge pertaining to the principles of operation of individual pieces of equipment, there is little guidance in developing a treatment train for processing soils and sediments. Fines, often termed slimes, are considered an operational problem in the mining industry, and are removed as a waste stream prior to making the principal separations. Contaminated sediment separations, however, involve making efficient separations near or within that "waste" fraction, and require the ability to handle and even recover the finest residuals. The condition of the materials presented to the plant will be highly variable, depending upon whether they are consolidated materials excavated from a CDF, or mechanically or hydraulically dredged sediments processed at the time of disposal. In situ water content may vary from 50 to 150 percent, presenting difficulty in handling and in processing through equipment designed for dry (less than 10 percent moisture content), or noncohesive, material. Previous testing of laboratory-scale mining equipment has demonstrated that the feed limitations are not always well defined, and the normal operating parameters may not interface well with the separations of interest for soils and sediments. Even among Architect/Engineer firms with experience in soil washing, assemblage of a treatment train appears to be something of an art, with the configuration varying depending upon specific site conditions. The result is an unacceptable number of operational unknowns for the layman and highly localized expertise within the consulting industry, which ultimately translates to prohibitive cost.

The significant objective of this phase of the project then was to evaluate how the equipment industry has responded to the potential in the sediment remediation arena: identifying the critical core pieces of equipment necessary for the key separations of interest and the minimum necessary auxiliary equipment required in support. The desired outcome is a portable testing unit that (a) is economical to purchase and operate, (b) can be supported with widely available equipment, (c) is adaptable to operational conditions and constraints at different facilities, and (d) is technically simple, operable by field personnel with a reasonable amount of preliminary instruction and technical support.

### **Testing of Candidate Equipment**

The core unit to be evaluated under this project was a hydrocyclone separator. Performance factors for the equipment considered for demonstration and purchase were as follows:

- a. The experience of the offeror in conducting size separation studies with dredged material and/or soil.
- b. Suitability of the equipment to separate sediment/soil at the 75-μm target size cutoff.

- c. Capability to produce a dewatered coarse product.
- d. Suitability of the equipment to handle a variety of sizes and types of dredged material.
- e. Portability of the unit.
- f. Capacity of the unit.
- g. Cost of the unit.
- h. Cost of the demonstration.
- *i.* Auxiliary equipment and site preparation requirements and costs.
- j. Technical expertise required for operation.
- *k*. Compatibility of equipment capacity with available storage area, water handling capability, and material preparation and feed capability at the demonstration site.

Preparation and auxiliary equipment requirements, adaptability, and technical expertise requirements were all relatively readily determined from product/offeror information and equipment design. Feed sensitivity and separation efficiency are best evaluated based on a performance test. It was anticipated that potential operational difficulties in this application and considerations of scale and logistics should come to light as a result of the demonstration. Samples were to be taken over a reasonable operating period to permit an assessment of the efficiency of the unit in making the desired separation, response to feed variations (if any), and the variability of the product material. A successful test would meet the separation criteria in a dewatered product, with a minimum of operational problems, at the specified efficiency. For the proposed demonstration, the specified cut point was 75 µm, with no more than 10 percent fines (percent by weight passing a No. 200 sieve) in the underflow.

# 2 Project Description

The Bayport CDF in Green Bay, WI (Figure 1), was selected as the field demonstration site. Green Bay is located on the eastern shoreline of Wisconsin, on Lake Michigan. Approximately 115,000 cu m (150,000 cu yd) of sediment are dredged annually, to maintain the 29-km- (18-mile-) long shipping channel in the Port of Green Bay. The Bayport disposal facility was filled to design capacity in the early 1970's. Brown County sought and received authorization to dispose of additional dredged material there. Current operations involve mechanical dredging, with transport and offloading at the CDF by truck. To extend the life of the facility as long as possible, material is periodically removed from the facility, following a period of dewatering. The facility is divided into separate cells to permit offloading, dewatering, excavation, and stockpiling to occur concurrently. The Brown County Port Authority has taken an active interest in innovative management alternatives for dredged material, and the Bayport CDF was also recently the site of a biotreatment demonstration.

# **Project Activities**

ERDC physical separation equipment available for demonstration/testing support was inventoried and its operational status verified. Response to an advertisement for technical support in identification of equipment alternatives and sources and development of a basic treatment train was limited (one firm responded) and exceeded the project budget for this task area. An extensive inhouse effort was therefore initiated to locate off-the-shelf equipment, and to identify those firms with interest in conducting a small demonstration and with availability of suitable scale equipment for preliminary field evaluation. Of the vendors contacted, only two indicated an interest in bringing equipment onsite for a small-scale demonstration: Tri-Flo Industries, Ltd., of Conroe, TX, and MetPro Supply, Inc., of Bartow, FL. Only one, MetPro Supply, responded to the advertisement for bids.

Tri-Flo Industries manufactures mobile, self-contained, fluid-processing equipment. Initially targeting the drilling industry, hydrocyclones mounted in series to a prefabricated header can be purchased, as well as complete, mobile, micro-fluid systems (MFS) designed for drilling mud recovery. These systems include a sump, mud "guns" for maintaining sediment in suspension, a shaking screen, hydrocyclones, and pumps. The configuration appears to have potential for sediment separation, but prescreening of gross oversize and slurrying of consolidated material would likely be needed to utilize the equipment as

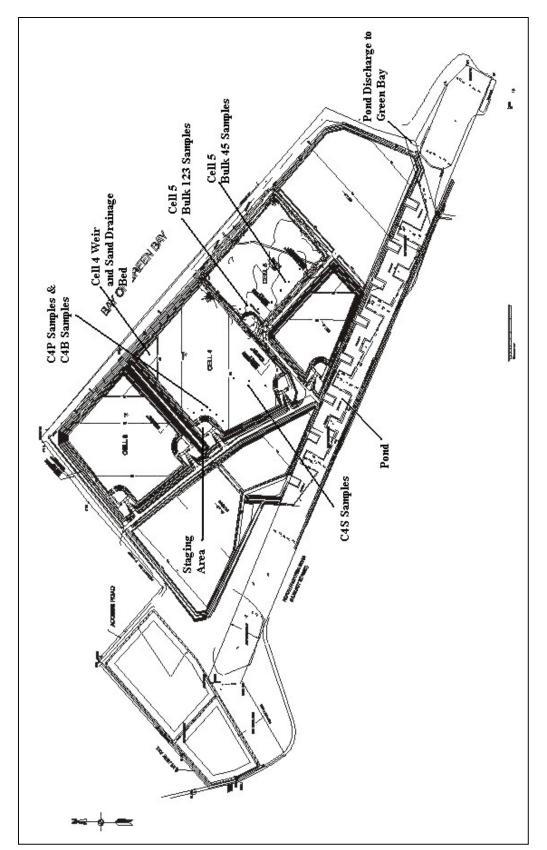


Figure 1. Green Bay Bayport CDF

presently equipped. One advantage to the configuration was the potential for making the sand/silt separation on the screen, followed by a finer cut at the hydrocyclones, thus addressing both size separations of principal interest with one unit. Tri-Flo also manufactures a mud pump that could be useful for excavating and slurrying consolidated material. The mud pump is equipped with an integral screen that prevents the pump from picking up oversize particles. Principal limitations of the equipment were the potential for blinding of the screens, the inability of screens to separate coarse organic materials from coarse minerals, and the fact that this equipment has not been demonstrated for dredged material or sediments.

MetPro Supply manufactures a self-contained maximum density separator (MDS) consisting of a trailer-mounted sump, slurry pump, and MDS. Both 0.15-and 0.3-m (6- and 12-in.) MDS have been demonstrated on sediments in the U.S. Army Engineer District, Jacksonville. Based on previous testing, MetPro recommended a 0.61-m (24-in.) MDS to produce a coarse fraction with less than 10 percent fines entrained. A 0.61-m (24-in.) MDS has a throughput of approximately 4.5 cu m (1,200 gal) per minute (approximately 68,039 kg (75 tons) solids per hour), and can accept particles up to 25-38 mm (1 – 1-1/2 in.) in diameter, thus simplifying prescreening. Dry or slurried material could be fed to the sump, with adjustments to the volume of makeup water supplied. The MDS differs from a conventional hydrocyclone in that a flexible sleeve is attached to the apex of the cone, and a vacuum is applied to the overflow line, thus restricting discharge of underflow until sufficient weight accumulates to force discharge. This reportedly results in a higher solids underflow.

Because of the potential variability in feed requirements, the offerors were tasked with providing the necessary auxiliary equipment to support the proposed separation unit, in effect developing a compatible treatment train. Mechanical excavation and prescreening were to be handled by the Detroit District. Auxiliary equipment was located in the Green Bay/Milwaukee area. A powerscreen for prescreening material; water supply pump; flexible, quick-coupling water hoses; and generator were available and obtained as short-term rentals.

Because the target separation of the proposed equipment was 75 µm, it was necessary to locate material containing sufficient sand to permit evaluation of the efficiency of the equipment in making this separation. Based on anecdotal information, Cell 5 was initially identified as containing sandy material from the outer harbor. Core and near-surface bulk samples were taken from Cell 5 for evaluation. However, finer material had apparently been placed over the target material, and the near-surface dredged material contained little sand. Additional samples were therefore taken for evaluation from Cell 4, where additional coarse material had recently been placed. (This material was from an inner harbor dredging project, and may not be representative of outer harbor sandy sediments). Sampling, sample handling, and bench-scale testing are further detailed in subsequent sections of this report. Approximately 380 cu m (500 cu yd) were

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<sup>&</sup>lt;sup>1</sup> Dean Haen, Personal Communication, 5 November 2001, Port Manager, Brown County Port and Solid Waste Department (Port of Green Bay), Green Bay, WI.

also excavated from Cell 5 for evaluation of material handling properties and effects of debris on ease of excavation as part of a cooperative effort funded under the DOER program. Some of this material was processed through the powerscreen to evaluate performance of a dry screen with wet of optimum material, and to evaluate the feasibility of feeding the hydrocyclone using mechanical excavation and prescreening. A smaller volume of material was excavated from Cell 4 for comparative processing through the screen. The remainder of the Cell 4 excavation was accomplished hydraulically, at the time of the demonstration.

### Field Sampling and Sample Handling

Nineteen 25.4-mm- (1-in.-) diameter cores were taken from Cell 5 of the Bayport CDF (Figure 1) to assess moisture content of the material initially proposed for processing. The cores were taken from along the truck dump and the south dike, areas accessible for mechanical excavation, using an AMS Soil Core Sampler with slide hammer, including stainless steel soil collector, and 25.4- by 0.6-mm (1- by 24-in.) butyrate plastic liners with polyethylene caps. (Although 0.6-m (24-in.) tubes were used, in many cases only 0.15-0.5 m (6-18 in.) of dredged material was recovered due either to the compressibility of the material or the inability to drive the sampler deeper.) Five 19-L (5-gal) samples intended for bulk sediment chemistry and fractionation testing were taken along the same perimeter and placed in high-density polyethylene (HDPE) buckets, using a shovel decontaminated with acetone and distilled deionized (DDI) water between samples. Each bucket was placed in a cooler and packed in ice for shipment. Chain-of-custody forms were placed inside the coolers and coolers were sealed with tape and chain-of-custody seals. Chain-of-custody seals were intact upon receipt at the laboratory. Temperatures of the samples upon arrival were below 4 °C (1.7 to 3.3 °C), with the exception of Bucket 4, which was 5 °C. Core samples were not intended for chemical analysis and were therefore not refrigerated. They were left in the disposable plastic liners and shipped together in a cooler for later extrusion.

Before samples were taken from Cell 4, representative material was screened in the field to verify the presence of sand. Based on the field screening, the Cell 4 material along the northwest truck dump was roughly estimated to contain 40-50 percent sand. Samples were subsequently taken for laboratory analysis along the northwest truck dump (adjacent Cell 2), and along a radius from the southwest truck dump (adjacent Cell 5 and the road) toward the outlet. Because this was a duplicate effort, a repeat full-scale sampling effort was not feasible. Smaller sample volumes were therefore obtained during a subsequent site visit and progress meeting.

Twelve 0.9-L (1-qt) glass jars were obtained from Cell 4: three for bulk chemical analysis (C4B1-C4B3), six for particle size analysis (C4P1-C4P6) from the perimeter of the northwest truck dump, and three (C4S1-C4S3) for particle size analysis along the inner radius. Sample preservation and chain of custody were observed as for the Cell 5 samples.

### Characterization and Bench-Scale Testing

#### Cell 5 characterization and bench-scale testing

The three 19-L (5-gal) samples taken from along the truck dump were mixed together (Buckets 1, 2 and 3 identified hereafter as Bulk 123 composite) and homogenized. The two 19-L (5-gal) samples taken along the dike (Buckets 4 and 5 identified as Bulk 45 composite) were also combined and homogenized. Wet chemistry, moisture content, and particle size distribution were evaluated on both composites. Because these parameters were relatively comparable for the two composites, one was selected for fractionation testing, rather than compositing the total volume. Bulk 123 was selected because of the greater accessibility of the area from which those buckets were taken, and the greater likelihood that they would be excavated. The cores were extracted from the plastic tubes, and samples were taken for water content analysis.

**Particle size analysis.** Subsamples of the Bulk 123 and Bulk 45 composites were analyzed on the Coulter particle size analyzer. Both composites contained over 90 percent fines.

**Bulk sediment chemistry.** The Bulk 123 composite and Bulk 45 composite were analyzed for polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs), metals, total organic carbon (TOC), total recoverable petroleum hydrocarbons (TRPH), and oil and grease (O&G) (the latter three being potential indicator compounds). Results are summarized in Table 1. Concentrations were comparable for all analytes for both composites.

Water content analysis. The core samples (44 total) were analyzed in duplicate for water content ( $w = (M_{water}/M_{solids})*100$ ) by oven drying. The average water content was  $112.4 \pm 24.6$  percent. Water content of the Bulk 123 and Bulk 45 composites averaged 98.7 and 82.2 percent, respectively.

**Fractionation testing.** Approximately 10.5 kg (wet weight) of the Bulk 123 sample was wet sieved through a 75- $\mu$ m sieve for analysis of the sand (>75  $\mu$ m) and fines (< 75  $\mu$ m) fractions. The resultant slurries were centrifuged and the solids retained for particle size and chemical analysis. Both fractions were analyzed on the Coulter LS100 Particle Size Analyzer to determine the efficiency of the separation. The results (Table 2) show that the fines were not very effectively removed from the sand. Further separation of the clay and silt from a subsample of the fines was attempted using an upflow column. The clay was never effectively removed from the fines, and the samples were therefore not further analyzed.

Additionally, a subsample of the Bulk 123 was fractionated by density using heavy media separation in order to analyze the contaminant differences between mineral and organic sediment material. In this procedure, the sediment was combined with a solution of sodium polytungstate at a specific gravity of 2.0. The mixture was briefly sonicated and then centrifuged to separate the density fractions. The material heavier than 2.0 specific gravity (mineral) sank to the bottom, and the lighter fraction (organic) floated on top of the solution and was

Table 1
Green Bay Cell 5 Chemical Analysis of Bulk Sediment, Size, and Density Fractions

	Bulk S	ediment	Size Fr	actions	Density	Fractions
Description	Composite 45	Composite 123	<75 μm (Fines)	>75 μm (Sand)	>2.0 sp.gr. (Mineral)	<2.0 sp.gr. (Organic)
		Indicato	r Analytes			
TOC, mg/kg	44833	48567	41300	38900	27800	47700
O&G, mg/kg	147	213	210	1030	67	640
TRPH, mg/kg	78	106	106.5	525	54	350
TVS, %					<4	<4
		Metals	s, mg/kg			
AS	3.29	3	2.95	3.55	1.8	2.99
CD	0.939	1	0.825		0.669	1.94
CR	53.33	52	47.05	50.65	41.3	85.2
CU	48.93	52	43.85	72.7	27.3	97.2
PB	68.8	64	58.3	76.8	40.9	51
HG	1.017	1	1.0345	1.44	0.625	2.2
NI	20.53	22	19.85	17.2	17.2	17.4
SE	1.06	1	0.95	1.55	0.599	0.998
AG	0.53	0	0.45	0.3	0.4	0.599
ZN	142.7	143	154	145.5	91.5	128
BA	81.70	83	77.95	57.65	70.7	73.5
FE	16300	16300	15500	10750	14600	7850
MN	442	485	436	832	382	434
МО	0.265	0	0.3	0.4	0.2	0.699
		PCBs	s, μg/kg			
PCB-1016	<22.5	<24.5	<24.5	<29.7	<15.8	<27.1
PCB-1221	<22.5	<24.5	<24.5	<29.7	<15.8	<27.1
PCB-1232	<22.5	<24.5	<24.5	<29.7	<15.8	<27.1
PCB-1242	1307	1161	970	1742.5	351	3278
PCB-1248	<22.5	<24.5	<24.5	<29.7	<15.8	<27.1
PCB-1254	<22.5	<24.5	<24.3	<29.7	<15.8	<27.1
PCB-1260	49.5	52.3	39.95	77.9	27.3	111
		PAHs	, μg/kg			
NAPHTH	125	165.3	85.95	367	29.9	513
ACENAY	9.0	10.0	<20	41.2	<6.4	43.4
ACENAP	14.3	21.6	11	61.85	<6.4	72
FLUORE	36.2	42.5	27.75	123	10.8	169
PHENAN	220	269.3	176	877	70	1180
ANTRAC	39.8	49.7	29.2	193.5	10.2	215
FLANTHE	309	388.0	260.5	1130	99.9	1690
PYRENE	301	391.7	240	1360	82.1	1570

Table 1 (Concluded)						
	Bulk Se	Bulk Sediment		actions	Density Fractions	
Description	Composite 45	Composite 123	<75 μm (Fines)	>75 μm (Sand)	>2.0 sp.gr. (Mineral)	<2.0 sp.gr. (Organic)
PAHs, μg/kg (Concluded0						
CHRYSE	192	247.7	152	850	66.2	992
BAANTHR	139	180.3	97.95	756	29.9	720
BBFLANT	127	173.3	112.5	565	53.4	762
BKFLANT	101	139.0	76.35	463.5	32.4	521
BAPYRE	149	193.3	108.45	769	35.6	747
I123PYR	122	164.3	99.45	540	39.4	637
DBAHANT	26.6	29.2	19.5	114	5.1	105
B-GHI-PY	149	179.3	112.5	614	48.3	678
2MeNAPH	130	157.7	98.95	426	31.8	574

Table 2 Particle Siz	e Analysis of	Green Bay C	ell 5 Samples	
Volume, %	Bulk 45	Bulk 123	Sand	Fines
< 5 µm	27.1	24.3	5.88	30.5
< 75 µm	93.3	90.8	43.5	99.98
> 75 µm	6.70	9.2	56.5	0.02

removed. The procedure was repeated several times to ensure a reasonably clean separation, as determined by visual inspection.

The four fractionated samples (fines, sand, mineral, organic) were analyzed for PAHs, PCBs, metals, and indicator analytes. Density (mineral and organic) samples were also analyzed for total volatile solids (TVS) to assess efficiency of separation, but this parameter was ultimately not useful, being less than the detection limit (DL) for both fractions. Results are summarized in Table 1.

The contaminant concentrations among the sand and fine fractions display trends opposite of that expected. The sand fraction is typically assumed to be relatively clean, and the fines to contain higher contaminant levels due to higher surface area and clay chemistry. Here, however, PAH and PCB concentrations in the sand exceed that of the fines, many by an order of magnitude. Most metal concentrations (arsenic, cadmium, chromium, copper, lead, mercury, selenium, manganese, molybdenum) were also higher in the sand than in the fines, but within the same order of magnitude. During wet sieving, an oily film was noted to settle on top of the sieved sand. It was thought that much of the contamination could be associated with this film, or with a coarse organic fraction. To evaluate this, the correlation coefficient was calculated for oil and grease and TOC concentrations versus PAH, PCB and metal concentrations. The resulting values indicate a strong linear relationship between oil and grease and PAH

concentrations, and a moderate relationship between oil and grease and PCBs and metals concentrations (Figures 2, 3, and 4), with the exception of selenium and manganese, which evidenced a strong linear relationship. PAH versus PCB concentrations were quite strongly linear. The correlation coefficient for TOC versus PAH, PCBs, and metals indicates a moderate to weak linear relationship. Note that this does not imply that there is not a strong relationship, simply the absence of a strong linear relationship.

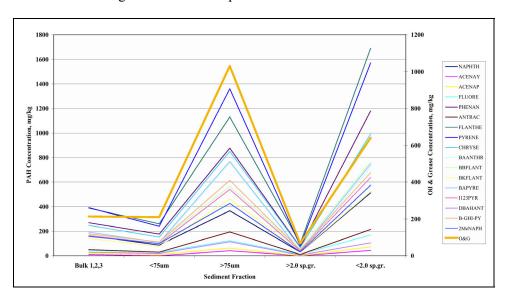


Figure 2. PAH versus oil and grease concentrations, Cell 5 material

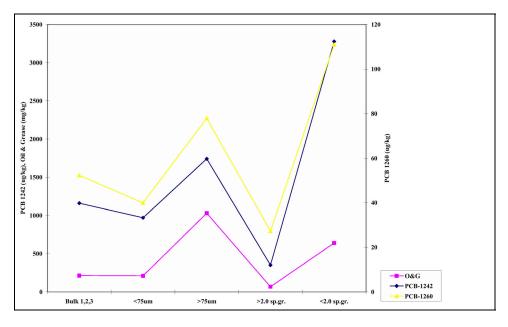


Figure 3. PCB versus oil and grease concentrations, Cell 5 material

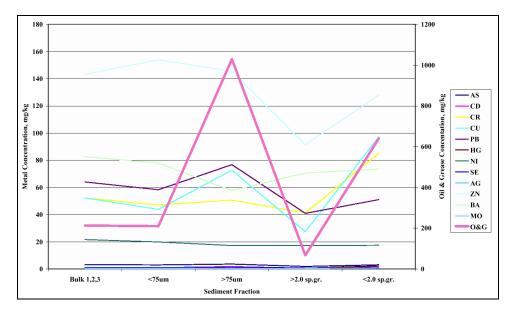


Figure 4. Metals versus oil and grease concentrations, Cell 5 material

The contaminant differences between the mineral and organic fractions were as expected, revealing order of magnitude greater PAH and PCB concentrations in the organic fraction. Metals were not as clearly distributed. Although higher concentrations of metals were present in the organic fraction, they were at the same order of magnitude as in the mineral fraction. Iron was an exception to this, being an order of magnitude higher in the mineral fraction than in the organic fraction. On average, metal concentrations were twice as high in the organic as in the mineral fraction (excluding iron), and PAHs and PCBs in the organic fraction averaged 18 and 7 times, respectively, that of the mineral fraction.

#### Cell 4 characterization and bench-scale testing

**Particle size analysis.** Samples C4P2, C4P4, and C4P6 were analyzed on the Coulter particle size analyzer to verify that a significant sand fraction was present. Percent greater than 75  $\mu$ m was approximately 40, 54, and 62 percent, respectively (by volume). Coulter analysis of the homogenized C4B samples indicated approximately 32.8 percent > 75  $\mu$ m. The samples taken from along the inner radius C4S1-3 were also analyzed on the Coulter, with the volume percent less than 75  $\mu$ m ranging from 96.5 to 99.6 percent, indicating that particular area would not be a good candidate for sand recovery. Output from the Coulter for the C4B samples is presented in Appendix A. Particle size analysis results are given in Table 3.

Table 3 Particle Size	Analysis of Gr	een Bay Cell	4 Samples	
Volume, %	C4P2	C4P4	C4P6	C4B
< 5 μm	15	13	10	20
< 75 μm	60	46	38	67.2
> 75 µm	40	54	62	32.8

**Bulk sediment chemistry.** The C4B1, C4B2, and C4B3 samples were homogenized, and two samples were then taken for bulk chemical analysis. The average concentrations for the composite are reported in Table 4. The analysis revealed the existence of some PAHs and metals, and concentrations of 3,755 and 39  $\mu$ g/kg, respectively, for PCB 1242 and PCB 1260.

**Water content analysis.** The water content of the C4P2, C4P4, and C4P6 samples was measured in duplicate by oven drying. The water contents averaged 59, 36, and 27 percent, respectively, for the three samples.

**Fractionation testing.** Although a full size and density separation was desired on the Cell 4 material, due to time constraints the most important separation to evaluate initially was the sand/silt separation at 75 µm. This separation was achieved by wet sieving a subsample of the material through a 75-um sieve. The sand fraction was washed off the sieve, and the wash water was then drained off the sand. The sand sample was analyzed with the Coulter LS100 Particle Size Analyzer and was found to contain only 5.5 percent <75 µm and 1.1 percent < 5 μm by volume, indicating a relatively clean separation. Half the fines slurry was flocculated using Hychem, Inc., CP626 cationic polymer. Two (duplicate) samples from both the dewatered sand and flocculated fines (silt/clay) samples were analyzed for chemical constituents as summarized in Table 4. The other half of the fines fraction was reserved for further fractionation testing. The unflocculated silt and clay fractions were separated using a 50-mm (2-in.) hydrocyclone and the fractions analyzed for PCBs and indicator analytes. The silt and clay fractions were analyzed on the Coulter to evaluate effectiveness of the hydrocyclone separation. Approximately 5.7 percent of the silt fraction was greater than 75 µm, and approximately 14 percent less than 3 µm. The presence of particles greater than 75 µm in the silt fraction can be attributed to oblong particles that pass through the #200 sieve. and agglomeration of particles, which the Coulter may read as a single, larger particle. The clay fraction was less clean, with a mean particle size of 15.24 µm, and a median particle size of 6.39 µm. Approximately 90 percent of the clay fraction was less than 36 µm, and 50 percent less than 6.4 µm. Only 25 percent was less than 2.7 µm. The silt and clay fractions were also subsequently analyzed for chemical constituents (Table 4).

Unlike the Cell 5 analysis, the Cell 4 data follow the expected trends, with greater concentrations of the contaminants associated with the fines than with the sand. Concentrations of metals in the silt/clay fraction are almost all one to two orders of magnitude higher than in the sand. PCBs are an order of magnitude higher in the silt/clay fraction than in the sand. Differences in concentrations

Table 4 Chemical Analysis of Cell 4 Bulk and Fractionated Sediment Samples

		Size Fractions					
Analyte	Sand (>75 μm) Avg. Conc.	Silt/Clay (<75 μm) Avg. Conc.	Silt (≈5 μm - 75 μm) Conc.	Clay (<5 μm) Avg. Conc.	Bulk Sediment Avg. Conc.		
		Indicat	tor Analytes				
TOC, mg/kg	1435	21100	9180	78900	27300		
O&G, mg/kg	43	475	110	320	220		
TRPH, mg/kg	10.5 J <sup>1</sup>	270	46	180	185		
TVS, %					<4%		
		Meta	ıls, mg/kg				
AS	0.45	5.05	2	6.85	2.2		
CD	0.04	1.355	0.32	2.29	0.6045		
CR	3.05	79.95	15.1	134	29.8		
CU	10.05	75.25	21.2	113	32.8		
PB	5.6	101.2	242	193.5	43.7		
HG	0.02	3.45	0.363	2.85	1.085		
NI	2.2	27.1	7	36.9	10.8		
SE	<0.200	1.1	0.3	1.3	0.4995		
AG	0.4	0.8995	0.4	1.6	0.4995		
ZN	13.5	148.555	320	681	76.1		
BA	4.6	104.5	27.5	183	42.85		
FE			10500	30600	3822.4		
MN	44.25	325.5	174	321	140		
MO	<0.100	0.849	0.5	1	0.3495		
		PCE	Bs, μg/kg				
PCB-1016	<10.3	<38.9	<11.2	<40.5	<12.7		
PCB-1221	<10.3	<38.9	<11.2	<40.5	<12.7		
PCB-1232	<10.3	<38.9	<11.2	<40.5	<12.7		
PCB-1242	444	5927.5	1950	7595	3754.5		
PCB-1248	<10.3	<38.9	<11.2	<40.5	<12.7		
PCB-1254	<10.3	<38.9	<11.2	<40.5	<12.7		
PCB-1260	21.4	317.5	18.2	238	39		
		PAH	łs, μg/kg				
NAPHTH	*2	*	*	*	123.5		
ACENAY	*	*	*	*	14.2		
ACENAP	*	*	*	*	41.25		
FLUORE	*	*	*	*	53.4		

<sup>&</sup>lt;sup>1</sup> Indicates estimated concentration for analyte that is above MDL but below LRL.
<sup>2</sup> \* Due to budgetary constraints, fractionation testing was limited to PCBs and metals, which were thought to be of greatest concern. There was insufficient silt sample for duplicate analysis; results given are therefore based on analysis of only one sample.

Table 4 (C	concluded)						
		Size Fractions					
Analyte	Sand (>75 μm) Avg. Conc.	Silt/Clay (<75 μm) Avg. Conc.	Silt (≈5 μm - 75 μm) Conc.	Clay (<5 μm) Avg. Conc.	Bulk Sediment Avg. Conc.		
		PAHs, μg/k	g (Concluded)				
PHENAN	*	*	*	*	228.5		
ANTRAC	*	*	*	*	46.55		
FLANTHE	*	*	*	*	217		
PYRENE	*	*	*	*	263		
CHRYSE	*	*	*	*	148		
BAANTHR	*	*	*	*	125		
BBFLANT	*	*	*	*	85.1		
BKFLANT	*	*	*	*	73.4		
BAPYRE	*	*	*	*	117.5		
I123PYR	*	*	*	*	82		
DBAHANT	*	*	*	*	15.45		
B-GHI-PY	*	*	*	*	95.55		
2MeNAPH	*	*	*	*	145.5		

between the silt fraction and the clay fraction are not as consistent, but concentrations in the clay fraction are higher for all analytes tested. TOC in the clay fraction is approximately 8.5 times that in the silt. Oil and grease, TRPH, PCB-1242, and PCB-1260 in the clay fraction are 2.9, 3.9, 3.9 and 26 times greater, respectively, than in the silt. Based on correlation coefficients, there is a strong positive correlation between metals concentrations and oil and grease and TRPH concentrations (Figure 5). Metals are moderately correlated to TOC concentration. There is also a moderate to strong positive correlation between PCBs, TRPH, and oil and grease (Figure 6) and PCBs and TOC (Figure 7).

#### **Test Candidate Unit**

A 1-day field demonstration was scheduled for 10 August 2000 at the Bayport CDF, Green Bay, WI. Equipment arrived onsite on Monday, 7 August 2000. Three full days were required to set up the system. This was not sufficient time to debug and troubleshoot, however; a cold start was made on the day of the demonstration. An electrical problem, unrelated to the separation unit, caused a minor delay. The system ran intermittently after that, with additional delays for clearing the jet pump and replacing or tightening clamps on water supply or slurry delivery hoses. The system was operated for approximately 5 hours, at which time sufficient material had been processed to assess the separation efficiency, and overall system characteristics and trouble points had been identified.

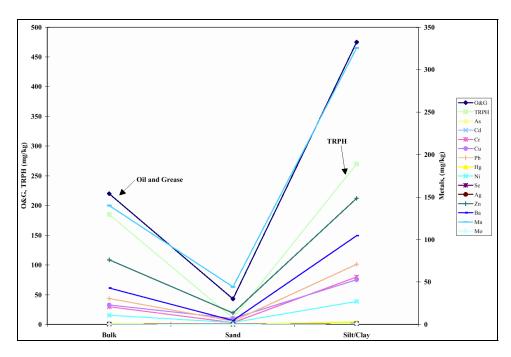


Figure 5. Metals versus TRPH and oil and grease concentrations, Cell 4 material

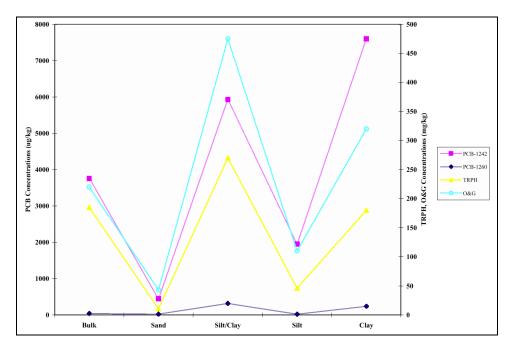


Figure 6. PCB versus TRPH and oil and grease concentrations, Cell 4 material

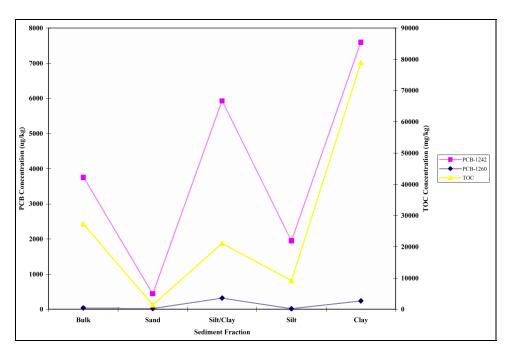


Figure 7. PCB versus TOC concentrations, Cell 4 material

#### Site logistics

The Cell 4 staging area was much farther from the freshwater source than the staging area originally selected for processing the Cell 5 material. Additionally, the Cell 4 staging area was much smaller than the original site, making onsite stockpiling of mechanically excavated material infeasible. It was therefore decided to excavate only a small amount of Cell 4 material for screening testing, and to excavate feed for the hydrocyclone using a modified jet pump. This was a particularly attractive alternative because of the potential benefits of small-scale hydraulic excavation or mechanical excavation (accessibility in unstable material, maneuverability around debris), and the added information that would result from a single effort. The principal disadvantage of this approach was that the process water had to be pumped approximately 300 m (1,000 ft) to the excavation point.

#### **Equipment**

Because of the distance between the staging area and the freshwater source, a larger water pump, transfer hoses, and generator were required than for the original staging area. Water pump, generator, and flexible hoses with quick couplings were available and obtained on a short-term rental basis. The MetPro mobile unit was as previously described in the section "Project Activities," consisting of a trailer, slurry pump, sump, and 0.6-m (24-in.) MDS (Figure 8). The eductor pump was fitted with an exterior ring, providing water jets for horizontal excavation (Figure 9). A powerscreen was also rented for screening the mechanically excavated material (Figures 10 and 11). The unit consisted of a grizzly, hopper with shredder, conveyer and shaking screen, equipped with a



Figure 8. MetPro mobile MDS unit



Figure 9. Eductor pump



Figure 10. Powerscreen



Figure 11. Screen undersize

harp screen to enhance processing of clayey material and reduce plugging due to wet material.

#### Field operation

The generator and water pump performed well, and similar equipment should be readily available at most locations. The flexible hoses were not designed to operate at the optimum delivery pressure, however. Several failures of the coupling/hose attachment occurred, but once this problem was addressed, the hoses performed reasonably well with the pump discharge throttled back somewhat. Based on this experience, however, it is thought that suitable hoses should be purchased for future operations. The eductor pump, although somewhat crudely assembled for the purposes of demonstration, performed fairly effectively. Although the site was heavily vegetated, the vegetation did not prevent excavation of the sediment in situ. Some variability was noted in the feed percent solids. Although this does not appear to have adversely affected the separation achieved, the result is an inefficient utilization of available water supply; and under different circumstances, separation efficiency could be affected. The pump did plug with large woody debris on two or three occasions. This could be prevented with a coarse protective screen at the pump intake. Additionally, no water jets faced in the downward direction. Excavation was impeded when a large rock was encountered underneath the pump. The sump and cyclone performed as expected. There was one failure of a band coupling, and this is potentially a weak point in the system. This connection could be made more secure with permanent piping, rather than the flexible hoses used to deliver the slurry pump discharge to the hydrocyclone inlet.

The Powerscreen performed relatively well considering that the material being fed was much wetter than the equipment is designed to handle. Problems were encountered, however, in feeding the screen. Clay clods rolled off the grizzly, reporting with the oversize. Attempts to push this material through the grizzly were only partially successful and time-consuming. The shaking screen passed the moist, fine materials without any evident problem, but blinding did occur on the coarse upper screen, where 0.1- to 0.15-m (4- to 6-in.) chunks of asphalt collected and had to be manually scraped off. Although the results indicate that the Powerscreen may be useful to prepare a small amount of material for process testing, feeding a full-scale hydrocyclone operation in this manner is probably infeasible.

#### **Visitors**

The demonstration was scheduled for 10 August 2000. Notice of the demonstration was posted on the Detroit District Web site, and notification sent directly to regulators and environmental organizations in the region. Approximately 30 people attended the demonstration. Results of the demonstration were also presented to the Great Lakes Commission in October 2000.

#### **Process sampling**

Three 19-L (5-gal) samples were taken simultaneously from the feed slurry and overflow, and three 4-L (1-gal) samples were taken from the underflow at five different intervals during processing (1400, 1505, 1525, 1625, and 1715) hours). Samples were captured and transported in new HDPE buckets. Of these, two from each sampling event were designated for particle size distribution and contaminant concentration analysis. The remainder of the samples were designated for particle size distribution only. The field sampling contractor was responsible for obtaining process samples and packaging and shipping them to ERDC. The overflow was sampled using a J-shaped diverter of polyvinyl chloride (PVC) pipe, which was passed through the overflow stream vertically to obtain a representative sample. The feed stream was sampled from a port welded onto the outlet from the slurry pump, where the slurry was expected to be turbulent and therefore well mixed. The line was purged for a few seconds prior to taking each sample. Underflow samples were captured directly from the cyclone underflow discharge. The volume of underflow samples was reduced from that specified in the Quality Assurance Project Plan<sup>1</sup> due to the high solids content of the underflow; 4-L (1-gal) samples were sufficient for all proposed analysis. Samples designated for chemical analysis were placed in a cooler and packed in ice for shipment. Samples designated for particle size analysis only were not refrigerated. Chain-of-custody forms were completed.

A single 19-L (5-gal) sample of the process supply water was also taken to establish baseline concentrations. It was initially proposed to sample effluent at the pond discharge during and after processing to verify that no permit parameters were violated during processing. However, water levels in the pond were low enough that there was no discharge from the pond at the time of processing, and the process overflow was passed through a sand drainage bed prior to being returned to the pond, reducing suspended solids. Dissolved contaminant levels were therefore measured in the process overflow and compared to Freshwater Acute Federal water quality criteria (USEPA 1999a). Of the parameters measured in the overflow having criteria, none exceeded acute water quality criteria.

Upon arrival at ERDC, the samples were refrigerated, and samples designated for chemical analysis were quickly processed to meet specified holding times. The feed and overflow slurry samples designated for chemical analysis (two field duplicates per stream per sampling time) were sampled while being stirred to obtain representative samples of the slurry. They were then centrifuged, and both solids and supernatant collected for chemical analysis. Percent solids of the underflow samples was much higher, and subsamples were taken directly from the buckets for chemical and particle size analysis without centrifuging. Subsamples of all process solids were also taken for water content and particle size analysis. Due to the difficulty involved in obtaining a representative subsample from a slurry, slurry samples were allowed to settle for

.

<sup>&</sup>lt;sup>1</sup> The QAPP describes the technical quality assurance/quality control for specific data collection, project objectives and organization, sampling design, analytical methods, data quality indicators, and data review (USEPA 1997, 1998).

an extended period of time. The supernatant was then poured off, the supernatant and remaining wet solids weighed, and then water content of the wet solids determined by oven drying. In this manner, the initial solids content of the slurry could be calculated. The settled solids were analyzed on the Coulter particle size analyzer for particle size distribution.

#### Results

#### Particle size analysis

Results of the particle size data for samples taken from the feed and overflow samples while stirring versus samples taken from the settled slurries were different. Because the settled slurries were still relatively liquid but at a higher percent solids, it was possible to mix them thoroughly and avoid rapid settling of coarse particles, thus producing more representative samples of all size ranges in the solids. The feed and overflow particle size distributions reported in Table 5 are for the subsamples taken from the settled samples. The underflow contained less than 8 percent fines by volume. Depending upon the specific gravity of the particles, this can be converted to percent fines by weight. Because the Coulter counter measures particle volume only (void volume is not measured), percent sand by volume can be taken to be approximately equivalent to percent sand by mass, assuming the same specific gravity for all particles in the material.

#### Percent moisture/percent solids

Results of percent moisture ( $W_{water}/W_{total}$ ) and percent solids ( $W_{solids}/W_{total}$ ) for the process streams are summarized in Table 6. The percent solids of the feed varied from 1.8 to 5.9 percent by weight. This is a relatively dilute feed stream. Although the separation efficiency is enhanced by a dilute feed stream, operational efficiency overall is lower than optimum. Percent solids of the underflow was quite high, ranging from 75.2 to 80.3 percent, reflecting the coarse nature of the underflow. Mean percent moisture of the underflow was approximately 22 percent, compared with approximately 98 percent for the feed and overflow process streams.

#### Chemical analysis

The results of the chemical analysis for each replicate at each sampling time were averaged for the three process streams, and are summarized in Table 7. For comparison, results of the bench-scale characterization for these fractions are given in parentheses. Qualitatively, the bench-scale testing appears to have given a relatively representative indication of the contaminant levels in the field-scale process streams. To evaluate whether the concentrations in the process and characterization fractions are essentially equivalent, the data were evaluated. Contaminants included arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, zinc, barium, PCB 1242, PCB 1260, TOC, oil and grease, and TRPH. One-half the detection limit was used for contaminant concentrations less than the detection limit. The Statistical Analysis System (SAS) release 8.1 was used to perform the data analysis (SAS Institute, Inc., 1989a, 1989b). The statistical procedures and assumptions are more fully

Table 5			
Particle Siz	e Analysis of Streams	from the Mobile Hy	drocyclone
Demonstrat	tion		-
Sample	Sand Volume % > 76.42 µm	Silt Volume % 5-76.42 µm	Clay Volume % < 5 µm
	Fe	eed	
F1400	26.2	55.6	18.2
F1505	23.4	59.1	17.5
F1525	33.5	49.6	16.9
F1625	26.9	55.2	17.9
F1715	30.4	52.5	17.1
Average	28.1	54.4	17.5
	Ove	rflow	
O1400	15.7	61.8	22.5
O1505	11.5	68.7	19.8
O1525	22.5	57.5	20
O1625	19.7	63.8	16.5
O1715	23.9	55.9	20.2
Average	18.7	61.5	19.8
	Und	erflow	
U1400	91.36	7.02	1.62
U1505	92.12	6.56	1.32
U1525	90.23	8.05	1.72
U1625	92.52	6.08	1.4
U1715	94.31	4.43	1.26
Average	92.11	6.43	1.46

described in Appendix B. On the basis of the statistical analysis, the following generalizations regarding concentrations in the process streams and bench-scale samples, respectively, can be made:

- a. Underflow = sand
- b. Overflow = silt/clay for zinc, oil and grease, and TRPH
- c. Overflow < silt/clay for all other analytes except TOC
- d. Overflow > silt/clay for TOC
- e. Feed = bulk for all analytes except PCB 1260
- f. Feed > bulk for PCB 1260

The statistical power of the analysis for most analytes was less than 75. The power was greater than 75 for comparison of nickel in underflow and sand, and for PCB 1242 in feed and bulk for the one-tailed tests. Power was also greater than 75 for comparison of nickel and PCB 1260 in underflow and sand and for comparison of arsenic, chromium, nickel, barium, PCB 1242, PCB 1260, oil and grease, and TRPH in feed and bulk for the two-tailed tests.

Table 6 Percent Moisture and Percent Solids of Process Streams				
Sample	Percent Moisture	Percent Solids		
	Feed			
F1400	94.08	5.92		
F1505	98.53	1.47		
F1525	98.18	1.82		
F1625	98.53	1.47		
F1715	98.19	1.81		
Average	97.5	2.5		
	Overflow			
O1400	96.94	3.06		
O1505	98.80	1.20		
O1525	98.88	1.12		
O1625	99.09	0.91		
O1715	98.66	1.34		
Average	98.5	1.5		
	Underflow			
U1400-3	19.84	80.16		
U1505-3	24.77	75.23		
U1525-3	24.59	75.41		
U1625-3	19.69	80.31		
U1715-3	20.62	79.38		
Average	21.9	78.1		

From a practical standpoint, it appears that the bench-scale characterization will give predicted concentrations at least within the same order of magnitude as the field process. In some cases, it is quite representative of the contaminant distribution that will be achieved at full scale for this process. From a processing objective, the statistical analysis suggests that the quality of the underflow was higher than the quality of the sand produced in the bench-scale testing, which is a favorable outcome. In some cases this may be attributable to lower concentrations in the process feed, but for other constituents this is not the case. SAS output is presented in Appendix B.

With regard to the processing objectives, the contaminant concentrations in the underflow ranged from 2 percent to 39 percent of that in the feed. PCBs were reduced 95 percent (Arochlor 1242) and 92 percent (Arochlor 1260), from 2,714  $\mu$ g/kg to 144  $\mu$ g/kg, and from 145  $\mu$ g/kg to 11.9  $\mu$ g/kg, respectively. TOC, oil and grease, and TRPH were significantly reduced in the process underflow. Most metals concentrations were reduced by an order of magnitude in the underflow, selenium, silver, and molybdenum being the exceptions. Selenium was reduced by a factor of 2.6, silver by a factor of 2.6, and molybdenum by a factor of 7.8.

Data validation sheets are included in Appendix C. Data were evaluated on the basis of representativeness, comparability, and completeness.

		Process Solids			Process Water			
Analyte	Feed Overflow Underf		Underflow	Supply	Feed Supernatant	Overflow Supernatant	Underflow Supernatant	
		l		ndicator Analyte	•	'	'	
TOC (mg/kg)	26,500	46,480	1019					
	(27300)	(21100)	(1435)					
TVS (%)	<4 (<4)	<4	<4					
O&G (mg/kg)	332 (220)	435 (475)	16 (43)					
TRPH (mg/kg)	259 (185)	338 (270)	<42.2 (10.5J)					
				PCBs				
Arochlor 1242 (ppb)	2713.8 (3754.5)	4037.9 (5927.5)	144.0 (444)	<0.24	0.27	0.21	N/A	
Arochlor 1260 (ppb)	145.0 (39)	109.9 (317.5)	11.9 (21.4)	<0.24	<0.24	<0.26	N/A	
	•		'	Metals	•		"	
As (ppm)	2.805 (2.2)	3.4 (5.05)	0.4883 (0.45)	0.005	0.0039	0.0041	N/A	
Cd (ppm)	0.5809 (0.6045)	0.82 (1.355)	0.05908 (0.04)	<0.0002	<0.0002	<0.0002	N/A	
Cr (ppm)	38.44 (29.8)	48.8 (79.95)	2.896 (3.05)	0.006	0.0046	0.0055	N/A	
Cu (ppm)	37.81 (32.8)	50 (75.25)	3.386 (10.05)	0.003	0.0025	0.0021	N/A	
Pb (ppm)	41.69 (43.7)	59.6 (101.2)	2.937 (5.6)	<0.001	<0.001	<0.001	N/A	
Hg (ppm)	0.8834 (1.085)	1.3 (3.45)	<0.040 (0.02)	<0.00020	<0.00020	<0.00020	N/A	
Ni (ppm)	15.718 (10.8)	19.0 (27.1)	2.578 (2.2)	0.014	0.0096	0.0093	N/A	
Se (ppm)	0.5116 (0.4995)	0.65 (1.1)	0.2 (<0.200)	0.002	0.002	0.002	N/A	
Ag (ppm)	0.3447 (0.4995)	0.53 (0.8995)	0.1333 (0.4)	<0.001	<0.001	<0.001	N/A	
Zn (ppm)	81.4 (76.1)	116.9 (148.55)	5.431 (13.5)	0.046	0.0428	0.0396	N/A	
Ba (ppm)	61.12 (42.85)	79.4 (104.5)	5.5052 (4.6)	0.108	0.1828	0.1769	N/A	
Fe (ppm)	14251 (3822.4)	18010	1879	0.08	0.1304	0.0703	N/A	
Mg (ppm)	15200	17740	N/A	75.6	76.85	78.19	N/A	
Mn (ppm)	275.2 (140)	366.2 (325.5)	47.71 (44.25)	3.03	1.609	1.60	N/A	
Mo (ppm)	0.7798 (0.3495)	0.40 (0.849)	0.1 (<0.100)	<0.001	0.003	0.0033	N/A	

26

Representativeness and comparability are qualitative criteria, and completeness is a quantitative criterion. Representativeness is a key concern during field sampling activities, and expresses the degree to which sample data accurately represent the site, specific matrices, and parameter variations at a sampling point. Representativeness is dependent on the proper design of the sampling program, proper selection of laboratory methods for the matrix under scrutiny, and stability of the laboratory methods. The representativeness criterion is best satisfied by making certain that the sampling locations, procedures, and quantities are selected based on the project objectives, and that suitable analytical procedures are utilized, preservation requirements are met, and holding times are not exceeded in the laboratory.

Comparability expresses the confidence with which one data set can be compared with another. The analysis of certified reference materials is used to provide data on comparability. The data obtained within this project will be comparable because all the standard operating procedures used in the determinations are based on methods with proven protocols and proven internal and external audit compliance relative to performance testing on certified reference material soils. All analyses of a single type will be conducted at the same laboratory. Completeness of the deliverable is measured for each set of data received by dividing the number of valid (passing quality assurance/quality control (QA/QC) requirements) measurements actually obtained by the number of measurements made. Each of the analytical parameters is evaluated separately in terms of precision, accuracy, and data acceptability. Precision pertains to the repeatability of the test, and is determined using a relative percent difference for duplicate samples and, for three or more replicate analysis, as a relative standard deviation or coefficient of variation. Most literature suggests that the goal for precision among field duplicates should be within 30 percent expressed as a relative percentage difference. Accuracy pertains to the closeness to the true value, and is evaluated using matrix spike recoveries expressed as a percent recovery. Completeness is then calculated on the basis of the number of samples meeting the established QA/QC requirements, as previously described. Acceptable completeness for a data set has been set at 90 percent meeting QA/QC requirements.

Completeness of the data was above 90 percent for all three data sets (Cells 4 and 5 characterization and field demonstration data). Some data were qualified due to minor problems. Corrective actions and data qualifications are detailed in the individual data validation sheets attached in Appendix C.

### **Equipment Acquisition**

On the basis of the performance of the 0.6-m (24-in.) MDS, a 0.3-m (12-in.) MDS was purchased for laboratory and field-scale feasibility testing. The capacity of the 0.3-m (12-in.) MDS is not sufficient for large-scale processing, but is better suited for feasibility testing because the volumes of process water required are more manageable, and the supporting equipment is correspondingly smaller and more widely available. A vibrating wet screen was also purchased for screening out oversize prior to the sump of the hydrocyclone, and fitted with 13-mm (1/2-in.) and 6-mm (1/4-in.) screens. Either dry or slurried material can

be fed onto the screen. The screen was ordered with excess capacity so that it could also be used with full-scale processing operations.

#### 3 Conclusions

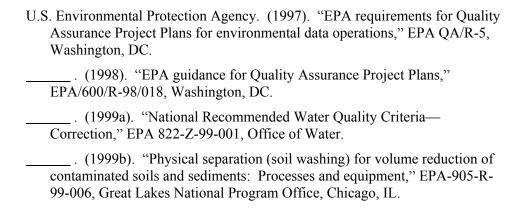
The principal objectives of the project were to evaluate the efficiency of the 0.6-m (24-in.) MDS in producing a sand fraction with fines and PCB concentrations sufficiently reduced to permit beneficial use, and to evaluate the correspondence of contaminant levels predicted by bench-scale testing versus field-scale operation. The target product (sand) specifications were less than 10 percent fines by mass and PCB concentrations less than 1 mg/kg. The underflow fraction produced averaged over 92 percent sand, as measured by a Coulter counter, and 0.144 mg/kg PCB 1242 and 0.0119 mg/kg PCB 1260. Based on statistical analysis of the results, the contaminant concentrations predicted for the sand fraction by the bench-scale testing were essentially equivalent to that achieved in the field operation. This is particularly significant since the process feed concentration of PCB 1260 was statistically greater than the bulk sediment concentration for the bench-scale testing. This indicates a somewhat higher efficiency of PCB removal for the MDS compared with that of wet sieving of the material. This may be attributable to the presence of coarse organic particles, which would report with the sand on a wet sieve, but would report with the overflow of a hydrocyclone. This is supported by the higher TOC concentration measured in the process overflow compared with that of the silt/clay fraction of the bulk sediment used in bench-scale testing. Distribution of metals was somewhat more variable than for PCBs, but metals were reduced by an order of magnitude in the sand fraction, with the exception of selenium, silver, and molybdenum. Selenium, silver, and molybdenum were reduced by factors of 2.6 to 7.8. In the absence of specific criteria establishing acceptable levels of metal constituents, partitioning theory could be used to evaluate the magnitude of potential release of metals in the beneficial use environment. Predicted releases could then be compared with applicable water quality criteria and necessary dilutions estimated.

Chapter 3 Conclusions 29

#### References

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30 References



References 31

## Appendix A Coulter Counter Particle Size Analysis, Cell 4 Material



Page 1 22 May 2002 11:10

#### - US Waterways Experiment Station -

File name:

C4b.\$av

Operator: Optical model:

Susan Bailey Fraunhofer

LS 100Q

Fluid Module

Fluid:

Water

Run length:

60 seconds

Software:

3.01 2.11

Firmware:

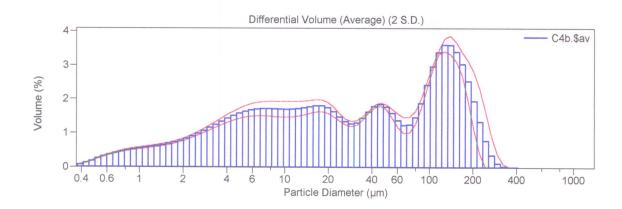
2.02 2.02

Average of 3 Files:

C4b1.\$av

C4b2.\$av

C4b3.\$av



Volume Statistics (Arithmetic)

C4b.\$av

Calculations from 0.375  $\mu m$  to 948.2  $\mu m$ 

Volume:

100%

Mean:

59.32 µm 25.95 µm

Median:

S.D.: C.V.:

65.88 µm 111%

D(3,2): Mode:

6.291 µm 127.6 µm

% < μm

2.371

25 6.565

50 25.95 75 107.9 90 161.7



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#### US Waterways Experiment Station -

C4b.\$av					
Channel	Particle	Cum. <	Channel	Particle	Cum. <
Number	Diameter	Volume	Number	Diameter	Volume
	(Lower)	8		(Lower)	8
	μm			μm	•
1	0.375	0	51	39.77	F.C. 4
2	0.412	0.070	52	43.66	56.4 58.2
3	0.452	0.19	53	47.93	60.0
4	0.496	0.38	54	52.63	61.8
5	0.545	0.64	55	57.77	63.4
6 7	0.598 0.657	0.96 1.33	56 57	63.41	64.7
8	0.721	1.75	58	69.62 76.43	66.0 67.2
9	0.791	2.22	59	83.90	68.7
10	0.869	2.72	60	92.09	70.6
11	0.953	3.25	61	101.1	73.0
12 13	1.047	3.81	62	111.0	75.9
14	1.149 1.261	4.38 4.98	63 64	121.8 133.7	79.3 82.9
15	1.385	5.61	65	146.8	86.5
16	1.520	6.27	66	161.2	89.9
17	1.669	6.95	67	176.8	92.9
18 19	1.832 2.010	7.69 8.47	68 69	194.2	95.5
20	2.207	9.31	70	213.2 234.1	97.4 98.7
21	2.423	10.2	71	256.8	99.5
22	2.660	11.2	72	282.1	99.9
23	2.920	12.3	73	309.6	99.97
24 25	3.206 3.519	13.4 14.7	74 75	339.8 373.1	99.997
26	3.862	16.0	76	409.6	100 100
27	4.241	17.5	77	449.7	100
28	4.656	19.0	78	493.6	100
29 30	5.111 5.611	20.5	79	541.9	100
31	6.158	22.2 23.9	80 81	594.9 653.0	100 100
32	6.761	25.6	82	716.9	100
33	7.421	27.3	83	786.9	100
34	8.147	29.0	84	863.9	100
35 36	8.944 9.819	30.7 32.4		948.2	100
37	10.78	34.1			
38	11.83	35.8			
39	12.99	37.5			
40 41	14.26	39.2			
42	15.65 17.18	41.0 42.8			
43	18.86	44.6			
44	20.70	46.3			
45	22.73	48.0			
46 47	24.95	49.4			
47	27.38 30.07	50.8 52.1			
49	33.00	53.4			
50	36.24	54.8			



Page 1 22 May 2002 11:13

#### - US Waterways Experiment Station -

File name: Operator:

C4b.\$av Susan Bailey Fraunhofer

Optical model: LS 100Q

Fluid Module

Fluid: Software: Water

3.01 2.11

Average of 3 Files:

C4b1.\$av

C4b2.\$av

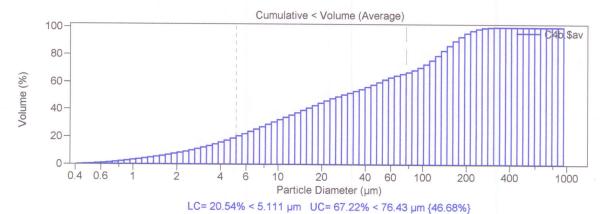
Run length:

60 seconds

Firmware:

2.02 2.02

C4b3.\$av



Volume	Statistics	(Arithmetic)	C4b.\$av
	0101101100	( , , , , , , , , , , , , , , , , , , ,	O-10. Way

Calculations from 5.111  $\mu m$  to 76.43  $\mu m$ 

Volume:

46.7%

Mean: Median: 25.13 µm 18.19 µm

S.D.: C.V.: 18.77 µm 74.7%

D(3,2): 14.33 µm Mode: 45.75 µm

% < μm

10 6.639 25 9.729 50 18.19

75 37.89 90 55.08



Page 2 22 May 2002 11:05

#### US Waterways Experiment Station -

C4b.\$av					
Channel	Particle	Cum. <	Channel	Particle	Cum. <
Number	Diameter	Volume	Number	Diameter	Volume
	(Lower)	8		(Lower)	8
	μm			μm	-
1	0.375	0	51	39.77	56.4
2	0.412	0.070	52	43.66	58.2
3	0.452	0.19	53	47.93	60.0
4	0.496	0.38	54	52.63	61.8
5	0.545	0.64	55	57.77	63.4
6	0.598	0.96	56	63.41	64.7
7 8	0.657 0.721	1.33 1.75	57 58	69.62 76.43	66.0 67.2
9	0.791	2.22	59	83.90	68.7
10	0.869	2.72	60	92.09	70.6
11	0.953	3.25	61	101.1	73.0
12	1.047	3.81	62	111.0	75.9
13	1.149	4.38	63	121.8	79.3
14 15	1.261 1.385	4.98 5.61	6 <b>4</b> 65	133.7 146.8	82.9 86.5
16	1.520	6.27	66	161.2	89.9
17	1.669	6.95	67	176.8	92.9
18	1.832	7.69	68	194.2	95.5
19	2.010	8.47	69	213.2	97.4
20 21	2.207 2.423	9.31 10.2	70 71	234.1 256.8	98.7 99.5
22	2.660	11.2	72	282.1	99.9
23	2.920	12.3	73	309.6	99.97
24	3.206	13.4	74	339.8	99.997
25	3.519	14.7	75	373.1	100
26 27	3.862 4.241	16.0 17.5	76 77	409.6	100
28	4.656	19.0	78	449.7 493.6	100 100
29	5.111	20.5	79 79	541.9	100
30	5.611	22.2	80	594.9	100
31	6.158	23.9	81	653.0	100
32	6.761	25.6	82	716.9	100
33 34	7.421 8.147	27.3 29.0	83 84	786.9 863.9	100 100
35	8.944	30.7	04	948.2	100
36	9.819	32.4			
37	10.78	34.1			
38	11.83	35.8			
39 40	12.99 14.26	37.5 39.2			
41	15.65	41.0			
42	17.18	42.8			
43	18.86	44.6			
44	20.70	46.3			
45	22.73	48.0			
46 47	24.95 27.38	49.4 50.8			
48	30.07	52.1			
49	33.00	53.4			
50	36.24	54.8			



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#### - US Waterways Experiment Station -

File name: Operator:

C4b.\$av Susan Bailey Fraunhofer

Optical model: LS 100Q

Fluid Module

Fluid:

Water 3.01 2.11 Run length:

60 seconds

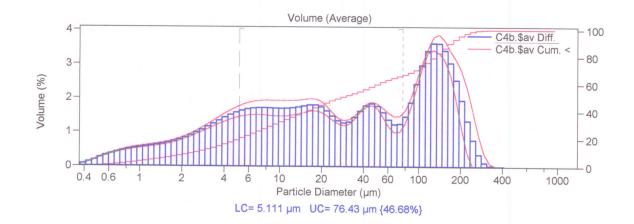
Software:

Firmware:

2.02 2.02

Average of 3 Files:

C4b1.\$av C4b2.\$av C4b3.\$av



### **Appendix B Statistical Analysis of Results**

#### Statistical Procedures, Assumptions and Analysis

**Step (A).** Evaluate the equality of variance assumption using the folded form of the F statistic (Snedecor and Cochran 1980). The null hypothesis is that the variance of group 1 is equal to the group 2 variance. The alternative hypothesis is that the variance of group 1 is not equal to the group 2 variance. These results are shown in Tables B3, B6, and B9. If probability Pr > F is less than 0.05, the null hypothesis was rejected.

**Step (B).** If the equality of variance hypothesis is not rejected, the test statistic was calculated using a pooled estimate of the variance. If the equality of variance hypothesis is rejected, a test statistic that assumes unequal population variances was utilized (Snedecor and Cochran 1980). These results are shown in Tables B2, B5, and B8. The respective hypotheses were expressed as HO:  $\mu$ Feed  $\leq \mu$ Bulk and HA:  $\mu$ Feed  $> \mu$ Bulk; HO:  $\mu$ Underflow  $\leq \mu$ Sand and HA:  $\mu$ Underflow  $> \mu$ Sand; HO:  $\mu$ Overflow  $\leq \mu$ Silt/Clay and HA:  $\mu$ Overflow  $> \mu$ Silt/Clay. The one-tailed t-test was conducted at  $\alpha$ =0.05. For a one-tailed t-test halve the Prov >|T| value. Reject the null hypothesis if half the Prob > |T| is less than 0.05.

From the underflow and sand data one would conclude that the underflow mean concentrations are less than or equal to the sand mean concentrations (Table B2). For the current experimental design, the mean comparison for nickel was the only comparison with a power greater than 0.75. From the overflow and silt/clay data one would conclude that the arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, zinc, barium, PCB 1242, PCB 1260, oil and grease, and TRPH overflow mean concentrations are less than or equal to the silt/clay mean concentrations and the TOC overflow mean concentration is greater than the silt/clay mean concentration (Table B5). For the current experimental design, the TOC and TRPH comparisons were the only comparisons with a power greater than 0.75. From the feed and bulk data one would conclude that the arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, zinc, barium, PCB 1242, TOC, oil and grease, and TRPH feed mean concentrations are less than or equal to the bulk mean concentrations and the PCB 1260 feed mean concentration is greater than the bulk mean concentration (Table B8). For the current experimental design, the PCB 1242 comparison was the only comparison with a power greater than 0.75.

An alternate way to write the respective hypotheses was HO:  $\mu$ Feed =  $\mu$ Bulk and HA:  $\mu$ Feed  $\neq \mu$ Bulk; HO:  $\mu$ Underflow =  $\mu$ Sand and HA:  $\mu$ Underflow  $\neq \mu$ Sand; HO:  $\mu$ Overflow =  $\mu$ Silt/Clay and HA:  $\mu$ Overflow  $\neq \mu$ Silt/Clay. Reject the null hypothesis if the Prob > |T| is less than 0.05.

From the underflow and sand data one would conclude that the underflow mean concentrations are equal to the sand mean concentrations (Table B2). For the current experimental design, the nickel and PCB 1260 comparisons were the

<sup>&</sup>lt;sup>1</sup> References cited in this appendix are included in the References section at the end of the main text.

only comparisons with a power greater than 0.75. From the overflow and silt/clay data one would conclude that the zinc, oil and grease, and TRPH overflow mean concentrations are equal to the silt/clay mean concentrations and the arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, barium, TOC, PCB 1242, and PCB 1260 overflow mean concentrations are not equal to the silt/clay mean concentrations (Table B5). For the current experimental design, the power of the comparison for arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, barium, PCB 1242, PCB 1260, and TOC was greater than 0.75. From the feed and bulk data one would conclude that the arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, zinc, barium, TOC, oil and grease, and TRPH feed mean concentrations are equal to the bulk mean concentrations and the PCB 1242 and PCB 1260 feed mean concentrations are not equal to the bulk mean concentrations (Table B8). For the current experimental design, the power of the comparison for arsenic, chromium, nickel, barium, PCB 1242, PCB 1260, oil and grease, and TRPH was greater than 0.75.

Table B1 Sand and Underflow Summary

			T CT		II CI	Tarram CT		II CI	
Variable	TYPE	NT	Lower CL	Voon	Upper CL	Lower CL Std Dev	Std Dev	Upper CL	Ctd Ross
AS	SAND	<b>N</b> 2	-0.185	Mean 0.45	Mean 1.0853	0.0315	0.0707	2.2564	0.05
AS AS	UNDERFLOW	10	0.4376	0.48	0.539	0.0313	0.0707	0.1294	0.03
AS	Diff (1-2)	10	-0.161	-0.038	0.084	0.0487	0.0709	0.1243	0.0549
CD	SAND	2	-0.181	0.04	0.1671	0.0493	0.0703	0.1243	0.0349
CD	UNDERFLOW	10	-0.007	0.0591	0.1671	0.0586	0.0141	0.4513	0.0269
CD	Diff (1-2)	10	-0.159	-0.019	0.1205	0.0565	0.0809	0.1334	0.0269
CR	SAND	2	-2.668	3.05	8.7678	0.2839	0.6364	20.308	0.45
CR	UNDERFLOW	10	2.4997	2.896	3.2923	0.3811	0.554	1.0114	0.1752
CR	Diff (1-2)	10	-0.817	0.154	1.1253	0.3932	0.5628	0.9876	0.4359
CU	SAND	2	-71.91	10.05	92.005	4.0696	9.1217	291.07	6.45
CU	UNDERFLOW	10	2.0019	3.386	4.7701	1.3309	1.9349	3.5324	0.6119
CU	Diff (1-2)	10	0.763	6.664	12.565	2.389	3.4191	6.0002	2.6484
PB	SAND	2	-26.17	5.6	37.366	1.5774	3.5355	112.82	2.0404
PB	UNDERFLOW	10	2.2494	2.937	3.6246	0.6611	0.9612	1.7547	0.3039
PB	Diff (1-2)	10	0.173	2.663	5.153	1.0081	1.4427	2.5319	1.1175
HG	SAND	2	-0.097	0.03	0.1571	0.0063	0.0141	0.4513	0.01
HG	UNDERFLOW	10	0.02	0.03	0.1371	0.0003	0.0141	0.4313	0.01
HG	Diff (1-2)	10	0.0023	0.02	0.0177	0.0031	0.0045	0.0078	0.0035
NI	SAND	2	-1.612	2.2	6.0119	0.1893	0.4243	13.538	0.0033
NI	UNDERFLOW	10	2.1989	2.578	2.9571	0.1693	0.5299	0.9674	0.1676
NI	Diff (1-2)	10	-1.276	-0.378	0.52	0.3636	0.5293	0.9131	0.403
SE	SAND	2	0.1	0.1	0.52	0.3636	0.5203	0.9131	0.403
SE	UNDERFLOW	10	0.1	0.1	0.1	•	0	•	0
SE	Diff (1-2)	10	0.1	0.1	0.1	•	0	•	O
AG	SAND	2	-0.871	0.4	1.6706	0.0631	0.1414	4.5128	0.1
AG	UNDERFLOW	10	0.0615	0.08	0.0985	0.0178	0.0258	0.0471	0.0082
AG	Diff (1-2)	10	0.232	0.32	0.408	0.0356	0.051	0.0471	0.0395
ZN	SAND	2	-8.101	13.5	35.101	1.0726	2.4042	76.717	1.7
ZN	UNDERFLOW	10	4.9366	5.431	5.9254	0.4754	0.6912	1.2618	0.2186
ZN	Diff (1-2)		6.3362	8.069	9.8018	0.7015	1.004	1.7619	0.7777
BA	SAND	2	-4.294	4.6	13.494	0.4417	0.9899	31.589	0.7
BA	UNDERFLOW	10	3.7931	5.052	6.3109	1.2104	1.7598	3.2127	0.5565
BA	Diff (1-2)		-3.384	-0.452	2.4796	1.1868	1.6986	2.9809	1.3157
pcb 1242	SAND	2	-559.8	444	1447.8	49.845	111.72	3565.1	79
pcb 1242	UNDERFLOW	10	126.31	144.03	161.75	17.035	24.767	45.214	7.8319
pcb 1242	Diff (1-2)		226.74	299.97	373.2	29.646	42.429	74.461	32.866
pcb 1260	SAND	2	-71.36	21.4	114.16	4.6059	10.324	329.43	7.3
pcb 1260	UNDERFLOW	10	8.3325	11.91	15.487	3.4399	5.001	9.1298	1.5814
pcb 1260	Diff (1-2)		-0.45	9.49	19.43	4.024	5.7591	10.107	4.461
toc	SAND	2	-788.6	1435	3658.6	110.42	247.49	7897.4	175
toc	UNDERFLOW	10	539.92	1019	1498.1	460.65	669.71	1222.6	211.78
toc	Diff (1-2)		-688.8	416	1520.8	447.28	640.14	1123.4	495.85
OG	SAND	2	-122.2	43	208.18	8.2024	18.385	586.66	13
OG	UNDERFLOW	10	14.003	17.55	21.097	3.4102	4.9579	9.0512	1.5678
OG	Diff (1-2)	•	12.543	25.45	38.357	5.2251	7.4781	13.124	5.7925
TRPH	SAND	2	-97.5	10.5	118.5	5.3631	12.021	383.59	8.5
TRPH	UNDERFLOW	10	20.058	20.85	21.642	0.7613	1.1068	2.0206	0.35
TRPH	Diff (1-2)		-17.16	-10.35	-3.544	2.7555	3.9437	6.9209	3.0548
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Table B2
Sand and Underflow T-Test Results

Variable	Method	Variances	DF	t Value	Pr >  t
AS	Pooled	Equal	10	-0.70	0.5012
AS	Satterthwaite	Unequal	1.44	-0.70	0.5803
CD	Pooled	Equal	10	-0.30	0.7669
CD	Satterthwaite	Unequal	9.95	-0.66	0.5215
CR	Pooled	Equal	10	0.35	0.7312
CR	Satterthwaite	Unequal	1.32	0.32	0.7928
CU	Pooled	Equal	10	2.52	0.0306
CU	Satterthwaite	Unequal	1.02	1.03	0.4886
PB	Pooled	Equal	10	2.38	0.0384
PB	Satterthwaite	Unequal	1.03	1.06	0.4782
HG	Pooled	Equal	10	2.89	0.0162
HG	Satterthwaite	Unequal	1	1.00	0.5000
NI	Pooled	Equal	10	-0.94	0.3704
NI	Satterthwaite	Unequal	1.7	-1.10	0.4026
SE	Pooled	Equal	10	•	•
SE	Satterthwaite	Unequal	10	•	•
AG	Pooled	Equal	10	8.10	<.0001
AG	Satterthwaite	Unequal	1.01	3.19	0.1908
ZN	Pooled	Equal	10	10.38	<.0001
ZN	Satterthwaite	Unequal	1.03	4.71	0.1273
BA	Pooled	Equal	10	-0.34	0.7383
BA	Satterthwaite	Unequal	2.55	-0.51	0.6536
pcb_1242	Pooled	Equal	10	9.13	<.0001
pcb_1242	Satterthwaite	Unequal	1.02	3.78	0.1609
pcb_1260	Pooled	Equal	10	2.13	0.0593
pcb_1260	Satterthwaite	Unequal	1.1	1.27	0.4103
toc	Pooled	Equal	10	0.84	0.4211
toc	Satterthwaite	Unequal	4.9	1.51	0.1915
OG	Pooled	Equal	10	4.39	0.0013
OG	Satterthwaite	Unequal	1.03	1.94	0.2970
TRPH	Pooled	Equal	10	-3.39	0.0069
TRPH	Satterthwaite	Unequal	1	-1.22	0.4375

Table B3
Sand and Underflow Equality of Variances Test Results

Variable	Method	Num DF	Den DF	F Value	Pr > F
AS	Folded F	9	1	1.00	1.0000
CD	Folded F	9	1	36.23	0.2566
CR	Folded F	1	9	1.32	0.5606
CU	Folded F	1	9	22.22	0.0022
PB	Folded F	1	9	13.53	0.0102
HG	Folded F	1	9	Infty	<.0001
NI	Folded F	9	1	1.56	1.0000
SE	Folded F	1	9	•	
AG	Folded F	1	9	30.00	0.0008
ZN	Folded F	1	9	12.10	0.0139
BA	Folded F	9	1	3.16	0.8250
pcb 1242	Folded F	1	9	20.35	0.0029
pcb 1260	Folded F	1	9	4.26	0.1380
toc	Folded F	9	1	7.32	0.5595
OG	Folded F	1	9	13.75	0.0097
TRPH	Folded F	1	9	117.96	<.0001

Table B4
Fines (Silt/Clay) and Overflow Summary

			Lower CL		Upper CL	Lower CL		Upper CL	
<u>Variable</u>	TYPE	N	Mean	Mean	Mean	Std Dev	Std Dev	Std Dev	Std Err
AS	FINES	2	4.4147	5.05	5.6853	0.0315	0.0707	2.2564	0.05
AS AS	OVERFLOW	10	3.1251	3.445	3.7649	0.3076	0.4472	0.8165	0.1414
AS AS	Diff (1-2)	10	0.8717	1.605	2.3383	0.2969	0.4249	0.7456	0.3291
CD	FINES	2	0.6562	1.355		0.2969	0.4249	2.482	0.3291
CD		10		0.8208	2.0538 0.8945	0.0347	0.0778	0.1882	0.0326
CD	OVERFLOW Diff (1-2)	10	0.7471 0.3602	0.5342	0.8945	0.0705	0.1031	0.1882	0.0326
CR	FINES	2	50.09	79.95	109.81	1.4827	3.3234	106.05	2.35
CR	OVERFLOW	10	43.629	48.75	53.871	4.9243	7.1592	13.07	2.2639
CR	Diff (1-2)	10	19.338	31.2	43.062	4.802	6.8726	12.061	5.3235
CU	FINES	2	55.555	75.25	94.945	0.978	2.192	69.948	1.55
CU	OVERFLOW	10	46.111	50	53.889	3.7398	5.4371	9.9261	1.7194
CU	Diff (1-2)	10	16.268	25.25	34.232	3.6365	5.2045	9.1335	4.0314
PB	FINES	2	65.623	101.2	136.78	1.7667	3.9598	126.36	2.8
PB	OVERFLOW	10	54.371	59.59	64.809	5.0183	7.2957	13.319	2.3071
PB	Diff (1-2)		29.47	41.61	53.75	4.9146	7.0337	12.344	5.4483
HG	FINES	2	3.3229	3.45	3.5771	0.0063	0.0141	0.4513	0.01
HG	OVERFLOW	10	1.1581	1.294	1.4299	0.1307	0.19	0.3468	0.0601
HG	Diff (1-2)		1.8448	2.156	2.4672	0.126	0.1803	0.3164	0.1397
NI	FINES	2	20.747	27.1	33.453	0.3155	0.7071	22.564	0.5
NI	OVERFLOW	10	17.502	18.98	20.458	1.4207	2.0655	3.7708	0.6532
NI	Diff (1-2)		4.7162	8.12	11.524	1.378	1.9722	3.4611	1.5277
SE	FINES	2	-0.171	1.1	2.3706	0.0631	0.1414	4.5128	0.1
SE	OVERFLOW	10	0.5579	0.6489	0.7399	0.0875	0.1272	0.2321	0.0402
SE	Diff (1-2)		0.2291	0.4511	0.6731	0.0899	0.1287	0.2258	0.0997
AG	FINES	2	-0.377	0.8995	2.1765	0.0634	0.1421	4.5353	0.1005
AG	OVERFLOW	10	0.4538	0.5292	0.6046	0.0725	0.1055	0.1925	0.0333
AG	Diff (1-2)		0.181	0.3703	0.5596	0.0766	0.1097	0.1925	0.085
ZN	FINES	2	-1699	148.56	1996.6	91.769	205.69	6563.6	145.45
ZN	OVERFLOW	10	106.52	116.94	127.36	10.022	14.57	26.599	4.6074
ZN	Diff (1-2)		-83.15	31.615	146.38	46.463	66.497	116.7	51.509
BA	FINES	2	72.734	104.5	136.27	1.5774	3.5355	112.82	2.5
BA	OVERFLOW	10	71.968	79.35	86.732	7.0976	10.319	18.838	3.2631
BA	Diff (1-2)		8.1449	25.15	42.155	6.8843	9.8528	17.291	7.632
pcb 1242	FINES	2	4345.6	5927.5	7509.4	78.553	176.07	5618.4	124.5
pcb_1242	OVERFLOW	10	3642.6	4037.9	4433.2	380.1	552.61	1008.8	174.75
pcb_1242	Diff (1-2)		979.7	1889.6	2799.5	368.36	527.2	925.2	408.37
pcb_1260	FINES	2	298.44	317.5	336.56	0.9464	2.1213	67.692	1.5
pcb_1260	OVERFLOW	10	92.963	109.9	126.84	16.285	23.676	43.224	7.4871
pcb_1260	Diff (1-2)		168.82	207.6	246.38	15.701	22.471	39.436	17.406
toc	FINES	2	-66573	21100	108773	4353.6	9758.1	311382	6900
toc	OVERFLOW	10	42701	46480	50259	3633.9	5283.1	9644.8	1670.6
toc	Diff (1-2)		-35538	-25380	-15222	4112.4	5885.7	10329	4559.1
OG	FINES	2	-859.2	475	1809.2	66.25	148.49	4738.4	105
OG	OVERFLOW	10	351.08	435	518.92	80.688	117.31	214.16	37.096
OG	Diff (1-2)		-168.5	40	248.47	84.397	120.79	211.98	93.563
TRPH	FINES	2	-619.4	270	1159.4	44.167	98.995	3158.9	70
TRPH	OVERFLOW	10	271.76	338	404.24	63.688	92.592	169.04	29.28
TRPH	Diff (1-2)		-228.9	-68	92.945	65.157	93.252	163.65	72.233

ilt/Clay) and	Overflow T-Test	Results			
<u>Variable</u>	Method	Variances	DF	t Value	Pr >  t
AS	Pooled	Equal	10	4.88	0.0006
AS	Satterthwaite	Unequal	9.99	10.70	<.0001
CD	Pooled	Equal	10	6.84	<.0001
CD	Satterthwaite	Unequal	1.8	8.36	0.0190
CR	Pooled	Equal	10	5.86	0.0002
CR	Satterthwaite	Unequal	3.39	9.56	0.0014
CU	Pooled	Equal	10	6.26	< .0001
CU	Satterthwaite	Unequal	4.26	10.91	0.0003
PB	Pooled	Equal	10	7.64	< .0001
PB	Satterthwaite	Unequal	2.68	11.47	0.0024
HG	Pooled	Equal	10	15.44	< .0001
HG	Satterthwaite	Unequal	9.44	35.40	< .0001
NI	Pooled	Equal	10	5.32	0.0003
NI	Satterthwaite	Unequal	5.53	9.87	0.000
SE	Pooled	Equal	10	4.53	0.0013
SE	Satterthwaite	Unequal	1.35	4.19	0.0993
AG	Pooled	Equal	10	4.36	0.0014
AG	Satterthwaite	Unequal	1.23	3.50	0.1392
ZN	Pooled	Equal	10	0.61	0.5533
ZN	Satterthwaite	Unequal	1	0.22	0.8638
BA	Pooled	Equal	10	3.30	0.0083
BA	Satterthwaite	Unequal	5.53	6.12	0.0012
pcb_1242	Pooled	Equal	10	4.63	0.0009
pcb_1242	Satterthwaite	Unequal	6.16	8.81	0.0001
pcb_1260	Pooled	Equal	10	11.93	< .0001
pcb_1260	Satterthwaite	Unequal	9.6	27.19	< .0001
toc	Pooled	Equal	10	-5.57	0.0002
toc	Satterthwaite	Unequal	1.12	-3.57	0.1521
OG	Pooled	Equal	10	0.43	0.6783
OG	Satterthwaite	Unequal	1.26	0.36	0.7702
TRPH	Pooled	Equal	10	-0.94	0.3687
TRPH	Satterthwaite	Unequal	1.38	-0.90	0.4992

Table B6 Fines (Silt/Clay) and Overflow Equality of Variances Test Results								
Variable	Method	Num DF	Den DF	F Value	Pr > F			
AS	Folded F	9	1	40.01	0.2443			
CD	Folded F	9	1	1.76	1.0000			
CR	Folded F	9	1	4.64	0.6930			
CU	Folded F	9	1	6.15	0.6075			
PB	Folded F	9	1	3.39	0.7990			
HG	Folded F	9	1	180.47	0.1154			
NI	Folded F	9	1	8.53	0.5201			
SE	Folded F	1	9	1.24	0.5897			
AG	Folded F	1	9	1.82	0.4214			
ZN	Folded F	1	9	199.30	<.0001			
BA	Folded F	9	1	8.52	0.5205			
pcb 1242	Folded F	9	1	9.85	0.4854			
pcb 1260	Folded F	9	1	124.57	0.1389			
toc	Folded F	1	9	3.41	0.1956			
OG	Folded F	1	9	1.60	0.4747			
TRPH	Folded F	1	9	1.14	0.6257			

Table B7 Bulk and Feed Summary

Name				Lower CL		Upper CL	Lower CL		Upper CL	
AS	Variable	TYPE	N		Mean			Std Dev		Std Err
AS										
AS										0.1
CD	AS	FEED	10	2.1377	2.805	3.4723	0.6416	0.9328	1.7028	0.295
CD	AS	Diff	(1-2)	-2.134	-0.605	0.9242	0.6191	0.886	1.5549	0.6863
CR	CD	BULK	2	0.5473	0.6045	0.6617	0.0028	0.0064	0.2031	0.0045
CR	CD	FEED	10	0.4583	0.5809	0.7035	0.1179	0.1714	0.3128	0.0542
CR	CD	Diff	(1-2)	-0.257	0.0236	0.3042	0.1136	0.1626	0.2853	0.1259
CR	CR	BULK	2	18.364	29.8	41.236	0.5679	1.2728	40.615	0.9
CU	CR	FEED	10	29.449	38.44	47.431	8.6451	12.569	22.945	3.9745
CU	CR	Diff	(1-2)	-29.23	-8.64	11.951	8.336	11.93	20.937	9.2412
CU         Diff (1-2)         -26.64         -5.01         16.623         8.7579         12.534         21.997         9.705           PB         BULK         2         33.535         43.7         53.865         0.5048         1.1314         36.102         0.68           PB         FEED         10         32.818         41.69         50.562         8.5304         12.402         22.641         3.9218           PB         Diff (1-2)         -18.31         2.01         22.325         8.2244         11.771         20.657         9.1176           HG         BULK         2         1.0215         1.085         1.1485         0.0032         0.0071         0.2256         0.001           HG         PEED         10         0.6547         0.8834         1.1121         0.2199         0.3198         0.5838         0.1011           HG         Diff (1-2)         -0.322         0.2016         0.7252         0.212         0.3034         0.5324         0.235           NI         BULK         2         0.4469         10.8         17.153         0.3155         0.7071         22.564         0.58           NI         Diff (1-2)         -12.55         -4.918         <	CU	BULK	2	-37.08	32.8	102.68	3.4702	7.7782	248.2	5.5
PB	CU	FEED	10	28.542	37.81	47.078	8.9111	12.955	23.651	4.0968
PB	CU	Diff	(1-2)	-26.64	-5.01	16.623	8.7579	12.534	21.997	9.709
PB	PB	BULK	2	33.535	43.7	53.865	0.5048	1.1314	36.102	0.8
HG         BULK         2         1.0215         1.085         1.1485         0.0032         0.0071         0.2256         0.005           HG         FEED         10         0.6547         0.8834         1.1121         0.2199         0.3198         0.5838         0.1011           HG         Diff         (1-2)         -0.322         0.2016         0.7252         0.212         0.3034         0.5324         0.238           NI         BULK         2         4.4469         10.8         17.153         0.3155         0.7071         22.564         0.5           NI         Diff         (1-2)         -12.55         -4,918         2.7162         3.0906         4.4233         7.7626         3.4263           SE         BULK         2         0.4931         0.4995         0.5059         0.0003         0.0077         0.0226         0.0059           SE         Diff         (1-2)         -0.322         -0.012         0.2977         0.1302         0.1892         0.3455         0.0598           SE         Diff         (1-2)         -0.322         -0.012         0.2977         0.1254         0.1795         0.315         0.1391           AG         BULK	PB	FEED	10	32.818	41.69	50.562	8.5304	12.402	22.641	3.9218
HG	PB	Diff	(1-2)	-18.31	2.01	22.325	8.2244	11.771	20.657	9.1176
HG Diff (1-2)	HG	BULK	2	1.0215	1.085	1.1485	0.0032	0.0071	0.2256	0.005
NI BULK 2 4.4469 10.8 17.153 0.3155 0.7071 22.564 0.5 NI FEED 10 12.387 15.718 19.049 3.203 4.6566 8.5012 1.4726 SE BULK 2 0.4931 0.4995 0.5059 0.0003 0.0007 0.0226 0.0005 SE FEED 10 0.3762 0.5116 0.647 0.1302 0.1892 0.3455 0.599 SE DIFF (1-2) -0.322 -0.012 0.2977 0.1254 0.1795 0.315 0.1399 AG BULK 2 -2.048 0.4995 3.0471 0.1265 0.2835 9.0481 0.2005 AG FEED 10 0.2617 0.3447 0.4277 0.0798 0.116 0.2117 0.0367 AG DIFF (1-2) -0.09 0.1548 0.3997 0.0992 0.1419 0.2491 0.1095 ZN BULK 2 49.417 76.1 102.78 1.325 2.9698 94.768 2.1 ZN FEED 10 62.753 81.4 100.05 17.93 26.067 47.589 8.2432 ZN DIFF (1-2) -48.01 -5.3 37.412 17.291 24.747 43.43 19.165 BA BULK 2 12.99 42.85 72.71 1.4827 3.3324 106.05 2.35 BA FEED 10 46.266 61.12 75.974 14.283 20.765 37.908 6.5664 BA DIFF (1-2) -52.32 -18.27 15.777 13.784 19.727 34.62 15.281 pcb_1242 FEED 10 2356 2713.8 3071.6 344.04 500.17 913.12 158.17 pcb_1242 FEED 10 114.55 144.96 175.37 29.245 42.517 77.62 13.445 pcb_1260 FEED 10 20471 26500 32529 5797 8427.9 15386 2665.1 COC BULK 2 2.99.38 20 347.06 3.599.1 8013.4 14063 6207.1 COG FEED 10 270.85 332 393.15 58.795 85.479 156.05 27.031 COG DIFF (1-2) -252.2 -112 28.171 56.747 81.216 142.53 62.905 TRPH BULK 2 121.47 185 248.53 3.1548 7.0711 225.64	HG	FEED	10	0.6547	0.8834	1.1121	0.2199	0.3198	0.5838	0.1011
NI FEED 10 12.387 15.718 19.049 3.203 4.6566 8.5012 1.4726 NI Diff (1-2) -12.55 -4.918 2.7162 3.0906 4.4233 7.7626 3.4263 SE BULK 2 0.4931 0.4995 0.5059 0.0003 0.0007 0.0226 0.0005 SE FEED 10 0.3762 0.5116 0.647 0.1302 0.1892 0.3455 0.0598 SE Diff (1-2) -0.322 -0.012 0.2977 0.1254 0.1795 0.315 0.1391 AG BULK 2 2-2.048 0.4995 3.0471 0.1265 0.2835 9.0481 0.2005 AG FEED 10 0.2617 0.3447 0.4277 0.0798 0.116 0.2117 0.0367 AG Diff (1-2) -0.09 0.1548 0.3997 0.0992 0.1419 0.2491 0.1095 ZN BULK 2 49.417 76.1 102.78 1.325 2.9698 94.768 2.1 ZN FEED 10 62.753 81.4 100.05 17.93 26.067 47.589 8.2432 ZN Diff (1-2) -48.01 -5.3 37.412 17.291 24.747 43.43 19.165 BA BULK 2 12.99 42.85 72.71 1.4827 3.3234 106.05 2.35 BA FEED 10 46.266 61.12 75.974 14.283 20.765 37.908 6.5664 BA Diff (1-2) -52.32 -18.27 15.777 13.784 19.727 34.62 15.281 pcb_1242 BULK 2 3341.5 3754.5 4167.5 20.506 45.962 1466.7 32.5 pcb_1242 Diff (1-2) 221.36 1040.7 1860 331.7 474.73 833.12 367.72 pcb_1260 BULK 2 21.55 39 75.848 1.8298 4.1012 130.87 2.9 pcb_1260 FEED 10 114.55 144.96 175.37 29.245 42.517 77.62 13.445 pcb_1260 BULK 2 12.053 27300 42547 757.14 1697.1 54153 12.00 G BULK 2 29.938 220 347.06 6.3095 14.142 451.28 100 G FEED 10 20471 26500 32529 5797 8427.9 15386 2665.1 COC BULK 2 92.938 220 347.06 6.3095 14.142 451.28 100 G FIED 10 20471 26500 32529 5797 8427.9 15386 2665.1 COC BULK 2 92.938 32 333 393.15 58.795 85.479 156.05 27.031 COG Diff (1-2) -252.2 -112 28.171 56.747 81.216 142.53 62.903 COG Diff (1-2) -252.2 -112 28.171 56.747 81.216 142.53 62.903 COG Diff (1-2) -252.2 -112 28.171 56.747 81.216 142.53 62.903 COG Diff (1-2) -252.2 -112 28.171 56.747 81.216 142.53 62.903 COG Diff (1-2) -252.2 -112 28.171 56.747 81.216 142.53 62.903 COG Diff (1-2) -252.2 -112 28.171 56.747 81.216 142.53 62.903 COG Diff (1-2) -252.2 -112 28.171 56.747 81.216 142.53 62.903 COG Diff (1-2) -252.2 -112 28.171 56.747 81.216 142.53 62.903	HG	Diff	(1-2)	-0.322	0.2016	0.7252	0.212	0.3034	0.5324	0.235
NI FEED 10 12.387 15.718 19.049 3.203 4.6566 8.5012 1.4726 NI Diff (1-2) -12.55 -4.918 2.7162 3.0906 4.4233 7.7626 3.4263 SE BULK 2 0.4931 0.4995 0.5059 0.0003 0.0007 0.0226 0.0005 SE FEED 10 0.3762 0.5116 0.647 0.1302 0.1892 0.3455 0.0598 SE Diff (1-2) -0.322 -0.012 0.2977 0.1254 0.1795 0.315 0.1391 AG BULK 2 -2.048 0.4995 3.0471 0.1265 0.2835 9.0481 0.2005 AG FEED 10 0.2617 0.3447 0.4277 0.0798 0.116 0.2117 0.0367 AG Diff (1-2) -0.09 0.1548 0.3997 0.0992 0.1419 0.2491 0.1095 ZN BULK 2 49.417 76.1 102.78 1.325 2.9698 94.768 2.1 ZN FEED 10 62.753 81.4 100.05 17.93 26.067 47.589 8.2432 ZN Diff (1-2) -48.01 -5.3 37.412 17.291 24.747 43.43 19.165 BA BULK 2 12.99 42.85 72.71 1.4827 3.3234 106.05 2.35 BA FEED 10 46.266 61.12 75.974 14.283 20.765 37.908 6.5664 BA Diff (1-2) -52.32 -18.27 15.777 13.784 19.727 34.62 15.281 pcb_1242 BULK 2 3341.5 3754.5 4167.5 20.506 45.962 1466.7 32.5 pcb_1242 Diff (1-2) 221.36 1040.7 1860 331.7 474.73 833.12 367.72 pcb_1260 BULK 2 2.152 39 75.848 1.8298 4.1012 130.87 2.9 pcb_1260 FEED 10 144.55 144.96 175.37 29.245 42.517 77.62 13.445 pcb_1260 BULK 2 12.053 27300 42547 757.14 1697.1 54153 1200 CG FEED 10 20471 26500 32529 5797 8427.9 15386 2665.1 CC BULK 2 92.938 220 347.06 6.3095 14.142 451.28 100 GG FEED 10 270.85 332 393.15 58.795 85.479 156.05 27.031 GG Diff (1-2) -252.2 -112 28.171 56.747 81.216 142.53 62.903 GG Diff (1-2) -252.2 -112 28.171 56.747 81.216 142.53 62.903 GG Diff (1-2) -252.2 -112 28.171 56.747 81.216 142.53 62.903 GG Diff (1-2) -252.2 -112 28.171 56.747 81.216 142.53 62.903 GRAPH BULK 2 121.47 185 248.53 3.1548 7.0711 225.64 58	NI	BULK	2	4.4469	10.8	17.153	0.3155	0.7071	22.564	0.5
NI Diff (1-2)	NI	FEED	10	12.387	15.718	19.049	3.203	4.6566	8.5012	1.4726
SE										
SE										
SE         Diff (1-2)         -0.322 -0.012         0.2977         0.1254 0.1795         0.315 0.1391           AG         BULK         2 -2.048 0.4995         3.0471 0.1265 0.2835         9.0481 0.2005           AG         FEED         10 0.2617 0.3447 0.4277 0.0798 0.116 0.2117 0.0367           AG         Diff (1-2)         -0.09 0.1548 0.3997 0.0992 0.1419 0.2491 0.1099           ZN         BULK         2 49.417 76.1 102.78 1.325 2.9698 94.768 2.1           ZN         FEED         10 62.753 81.4 100.05 17.93 26.067 47.589 8.2432           ZN         Diff (1-2)         -48.01 -5.3 37.412 17.291 24.747 43.43 19.165           BA         BULK         2 12.99 42.85 72.71 1.4827 3.3234 106.05 2.35           BA         FEED         10 46.266 61.12 75.974 14.283 20.765 37.908 6.5664           BA         Diff (1-2)         -52.32 -18.27 15.777 13.784 19.727 34.62 15.281           pcb_1242 BULK         2 3341.5 3754.5 4167.5 20.506 45.962 1466.7 32.5           pcb_1242 Diff (1-2)         2356 2713.8 3071.6 344.04 500.17 913.12 158.17           pcb_1242 Diff (1-2)         221.36 1040.7 1860 331.7 474.73 833.12 367.72           pcb_1260 BULK         2 2.152 39 75.848 1.8298 4.1012 130.87 2.9           pcb_1260 FEED         10 114.55 144.96 175.37 29.245 42.517 77.62 13.445           toc         FEED         10 20471 26500 3259 5797										0.0598
AG BULK 2 -2.048 0.4995 3.0471 0.1265 0.2835 9.0481 0.2005 AG FEED 10 0.2617 0.3447 0.4277 0.0798 0.116 0.2117 0.0367 AG Diff (1-2) -0.09 0.1548 0.3997 0.0992 0.1419 0.2491 0.1098 ZN BULK 2 49.417 76.1 102.78 1.325 2.9698 94.768 2.1 ZN FEED 10 62.753 81.4 100.05 17.93 26.067 47.589 8.2432 ZN Diff (1-2) -48.01 -5.3 37.412 17.291 24.747 43.43 19.169 BA BULK 2 12.99 42.85 72.71 1.4827 3.3234 106.05 2.35 BA FEED 10 46.266 61.12 75.974 14.283 20.765 37.908 6.5664 BBA Diff (1-2) -52.32 -18.27 15.777 13.784 19.727 34.62 15.281 pcb_1242 BULK 2 3341.5 3754.5 4167.5 20.506 45.962 1466.7 32.5 pcb_1242 FEED 10 2356 2713.8 3071.6 344.04 500.17 913.12 158.17 pcb_1242 Diff (1-2) 221.36 1040.7 1860 331.7 474.73 833.12 367.72 pcb_1260 BULK 2 2.152 39 75.848 1.8298 4.1012 130.87 2.9 pcb_1260 Diff (1-2) -175.6 -106 -36.31 28.198 40.356 70.822 31.26 toc BULK 2 12053 27300 42547 757.14 1697.1 54153 1200 toc FEED 10 20471 26500 32529 5797 8427.9 15386 2665.1 toc Diff (1-2) -13030 800 14630 5599.1 8013.4 14063 6207.1 OG BULK 2 92.938 220 347.06 6.3095 14.142 451.28 10 OG FEED 10 270.85 332 393.15 58.795 85.479 156.05 27.031 OG BULK 2 121.47 185 248.53 3.1548 7.0711 225.64 57.031 TRPH BULK 2 121.47 185 248.53 3.1548 7.0711 225.64 57.031	SE	Diff	(1-2)							
AG FEED 10 0.2617 0.3447 0.4277 0.0798 0.116 0.2117 0.0367 AG Diff (1-2) -0.09 0.1548 0.3997 0.0992 0.1419 0.2491 0.1099 ZN BULK 2 49.417 76.1 102.78 1.325 2.9698 94.768 2.1 ZN FEED 10 62.753 81.4 100.05 17.93 26.067 47.589 8.2432 ZN Diff (1-2) -48.01 -5.3 37.412 17.291 24.747 43.43 19.169 BA BULK 2 12.99 42.85 72.71 1.4827 3.3234 106.05 2.35 BA FEED 10 46.266 61.12 75.974 14.283 20.765 37.908 6.5664 BBA Diff (1-2) -52.32 -18.27 15.777 13.784 19.727 34.62 15.281 pcb_1242 BULK 2 3341.5 3754.5 4167.5 20.506 45.962 1466.7 32.5 pcb_1242 FEED 10 2356 2713.8 3071.6 344.04 500.17 913.12 158.17 pcb_1242 Diff (1-2) 221.36 1040.7 1860 331.7 474.73 833.12 367.72 pcb_1260 BULK 2 2.152 39 75.848 1.8298 4.1012 130.87 2.9 pcb_1260 FEED 10 114.55 144.96 175.37 29.245 42.517 77.62 13.445 pcb_1260 Diff (1-2) -175.6 -106 -36.31 28.198 40.356 70.822 31.26 toc BULK 2 12053 27300 42547 757.14 1697.1 54153 1200 toc FEED 10 20471 26500 32529 5797 8427.9 15386 2665.1 toc Diff (1-2) -13030 800 14630 5599.1 8013.4 14063 6207.1 OG BULK 2 92.938 220 347.06 6.3095 14.142 451.28 10 GG FEED 10 270.85 332 393.15 58.795 85.479 156.05 27.031 OG DIff (1-2) -252.2 -112 28.171 56.747 81.216 142.53 62.905 TRPH BULK 2 121.47 185 248.53 3.1548 7.0711 225.64 5 TRPH FEED 10 209.04 259 308.96 48.034 69.833 127.49 22.083	AG									0.2005
AG Diff (1-2)			10							0.0367
ZN BULK 2 49.417 76.1 102.78 1.325 2.9698 94.768 2.1 ZN FEED 10 62.753 81.4 100.05 17.93 26.067 47.589 8.2432 ZN Diff (1-2) -48.01 -5.3 37.412 17.291 24.747 43.43 19.165 BA BULK 2 12.99 42.85 72.71 1.4827 3.3234 106.05 2.35 BA FEED 10 46.266 61.12 75.974 14.283 20.765 37.908 6.5664 BBA Diff (1-2) -52.32 -18.27 15.777 13.784 19.727 34.62 15.281 pcb_1242 BULK 2 3341.5 3754.5 4167.5 20.506 45.962 1466.7 32.5 pcb_1242 FEED 10 2356 2713.8 3071.6 344.04 500.17 913.12 158.17 pcb_1242 Diff (1-2) 221.36 1040.7 1860 331.7 474.73 833.12 367.72 pcb_1260 BULK 2 2.152 39 75.848 1.8298 4.1012 130.87 2.9 pcb_1260 FEED 10 114.55 144.96 175.37 29.245 42.517 77.62 13.445 pcb_1260 Diff (1-2) -175.6 -106 -36.31 28.198 40.356 70.822 31.26 toc BULK 2 12053 27300 42547 757.14 1697.1 54153 1200 toc FEED 10 20471 26500 32529 5797 8427.9 15386 2665.1 toc Diff (1-2) -13030 800 14630 5599.1 8013.4 14063 6207.1 OG BULK 2 92.938 220 347.06 6.3095 14.142 451.28 10 OG FEED 10 270.85 332 393.15 58.795 85.479 156.05 27.031 TRPH BULK 2 121.47 185 248.53 3.1548 7.0711 225.64 59.03 TRPH BULK 2 121.47 185 248.53 3.1548 7.0711 225.64 TRPH FEED 10 209.04 259 308.96 48.034 69.833 127.49 22.083			(1-2)							0.1099
ZN FEED 10 62.753 81.4 100.05 17.93 26.067 47.589 8.2432 ZN Diff (1-2) -48.01 -5.3 37.412 17.291 24.747 43.43 19.169 BA BULK 2 12.99 42.85 72.71 1.4827 3.3234 106.05 2.35 BA FEED 10 46.266 61.12 75.974 14.283 20.765 37.908 6.5664 BA Diff (1-2) -52.32 -18.27 15.777 13.784 19.727 34.62 15.281 pcb_1242 BULK 2 3341.5 3754.5 4167.5 20.506 45.962 1466.7 32.5 pcb_1242 FEED 10 2356 2713.8 3071.6 344.04 500.17 913.12 158.17 pcb_1242 Diff (1-2) 221.36 1040.7 1860 331.7 474.73 833.12 367.72 pcb_1260 BULK 2 2.152 39 75.848 1.8298 4.1012 130.87 2.9 pcb_1260 Diff (1-2) -175.6 -106 -36.31 28.198 40.356 70.822 31.26 toc BULK 2 12053 27300 42547 757.14 1697.1 54153 1206 toc BULK 2 12053 27300 42547 757.14 1697.1 54153 1206 toc Diff (1-2) -13030 800 14630 5599.1 8013.4 14063 6207.1 OG BULK 2 92.938 220 347.06 6.3095 14.142 451.28 10 GG FEED 10 270.85 332 393.15 58.795 85.479 156.05 27.031 TRPH BULK 2 121.47 185 248.53 3.1548 7.0711 225.64 TRPH FEED 10 209.04 259 308.96 48.034 69.833 127.49 22.083										2.1
ZN Diff (1-2)	ZN	FEED	10	62.753	81.4	100.05		26.067	47.589	8.2432
BA BULK 2 12.99 42.85 72.71 1.4827 3.3234 106.05 2.35 BA FEED 10 46.266 61.12 75.974 14.283 20.765 37.908 6.5664 BA Diff (1-2) -52.32 -18.27 15.777 13.784 19.727 34.62 15.281 pcb_1242 BULK 2 3341.5 3754.5 4167.5 20.506 45.962 1466.7 32.5 pcb_1242 FEED 10 2356 2713.8 3071.6 344.04 500.17 913.12 158.17 pcb_1242 Diff (1-2) 221.36 1040.7 1860 331.7 474.73 833.12 367.72 pcb_1260 BULK 2 2.152 39 75.848 1.8298 4.1012 130.87 2.9 pcb_1260 FEED 10 114.55 144.96 175.37 29.245 42.517 77.62 13.445 pcb_1260 Diff (1-2) -175.6 -106 -36.31 28.198 40.356 70.822 31.26 toc BULK 2 12053 27300 42547 757.14 1697.1 54153 1200 toc FEED 10 20471 26500 32529 5797 8427.9 15386 2665.1 toc Diff (1-2) -13030 800 14630 5599.1 8013.4 14063 6207.1 OG BULK 2 92.938 220 347.06 6.3095 14.142 451.28 10 OG FEED 10 270.85 332 393.15 58.795 85.479 156.05 27.031 OG Diff (1-2) -252.2 -112 28.171 56.747 81.216 142.53 62.909 TRPH BULK 2 121.47 185 248.53 3.1548 7.0711 225.64 52.083	ZN	Diff	(1-2)							19.169
BA FEED 10 46.266 61.12 75.974 14.283 20.765 37.908 6.5664 BA Diff (1-2) -52.32 -18.27 15.777 13.784 19.727 34.62 15.281 pcb_1242 BULK 2 3341.5 3754.5 4167.5 20.506 45.962 1466.7 32.5 pcb_1242 FEED 10 2356 2713.8 3071.6 344.04 500.17 913.12 158.17 pcb_1242 Diff (1-2) 221.36 1040.7 1860 331.7 474.73 833.12 367.72 pcb_1260 BULK 2 2.152 39 75.848 1.8298 4.1012 130.87 2.9 pcb_1260 FEED 10 114.55 144.96 175.37 29.245 42.517 77.62 13.445 pcb_1260 Diff (1-2) -175.6 -106 -36.31 28.198 40.356 70.822 31.26 toc BULK 2 12053 27300 42547 757.14 1697.1 54153 1200 toc FEED 10 20471 26500 32529 5797 8427.9 15386 2665.1 toc Diff (1-2) -13030 800 14630 5599.1 8013.4 14063 6207.1 OG BULK 2 92.938 220 347.06 6.3095 14.142 451.28 10 GG FEED 10 270.85 332 393.15 58.795 85.479 156.05 27.031 COG Diff (1-2) -252.2 -112 28.171 56.747 81.216 142.53 62.905 TRPH BULK 2 121.47 185 248.53 3.1548 7.0711 225.64 5 TRPH FEED 10 209.04 259 308.96 48.034 69.833 127.49 22.083										2.35
BA Diff (1-2)										6.5664
pcb_1242         BULK         2         3341.5         3754.5         4167.5         20.506         45.962         1466.7         32.5           pcb_1242         FEED         10         2356         2713.8         3071.6         344.04         500.17         913.12         158.17           pcb_1242         Diff (1-2)         221.36         1040.7         1860         331.7         474.73         833.12         367.72           pcb_1260         BULK         2         2.152         39         75.848         1.8298         4.1012         130.87         2.9           pcb_1260         FEED         10         114.55         144.96         175.37         29.245         42.517         77.62         13.445           pcb_1260         Diff (1-2)         -175.6         -106         -36.31         28.198         40.356         70.822         31.26           toc         BULK         2         12053         27300         42547         757.14         1697.1         54153         1200           toc         FEED         10         20471         26500         32529         5797         8427.9         15386         2665.1           toc         Diff (1-2)         -13030	BA	Diff	(1-2)	-52.32	-18.27		13.784	19.727	34.62	15.281
pcb_1242         FEED         10         2356         2713.8         3071.6         344.04         500.17         913.12         158.17           pcb_1242         Diff (1-2)         221.36         1040.7         1860         331.7         474.73         833.12         367.72           pcb_1260         BULK         2         2.152         39         75.848         1.8298         4.1012         130.87         2.9           pcb_1260         FEED         10         114.55         144.96         175.37         29.245         42.517         77.62         13.445           pcb_1260         Diff (1-2)         -175.6         -106         -36.31         28.198         40.356         70.822         31.26           toc         BULK         2         12053         27300         42547         757.14         1697.1         54153         1206           toc         FEED         10         20471         26500         32529         5797         8427.9         15386         2665.1           toc         Diff (1-2)         -13030         800         14630         5599.1         8013.4         14063         6207.1           OG         BULK         2         92.938	pcb 1242									32.5
pcb_1242         Diff (1-2)         221.36         1040.7         1860         331.7         474.73         833.12         367.72           pcb_1260         BULK         2         2.152         39         75.848         1.8298         4.1012         130.87         2.9           pcb_1260         FEED         10         114.55         144.96         175.37         29.245         42.517         77.62         13.445           pcb_1260         Diff (1-2)         -175.6         -106         -36.31         28.198         40.356         70.822         31.26           toc         BULK         2         12053         27300         42547         757.14         1697.1         54153         1206           toc         FEED         10         20471         26500         32529         5797         8427.9         15386         2665.1           toc         Diff (1-2)         -13030         800         14630         5599.1         8013.4         14063         6207.1           OG         BULK         2         92.938         220         347.06         6.3095         14.142         451.28         10           OG         FEED         10         270.85         33		FEED	10	2356	2713.8	3071.6	344.04	500.17	913.12	158.17
pcb_1260         BULK         2         2.152         39         75.848         1.8298         4.1012         130.87         2.9           pcb_1260         FEED         10         114.55         144.96         175.37         29.245         42.517         77.62         13.445           pcb_1260         Diff (1-2)         -175.6         -106         -36.31         28.198         40.356         70.822         31.26           toc         BULK         2         12053         27300         42547         757.14         1697.1         54153         1200           toc         FEED         10         20471         26500         32529         5797         8427.9         15386         2665.1           toc         Diff (1-2)         -13030         800         14630         5599.1         8013.4         14063         6207.1           OG         BULK         2         92.938         220         347.06         6.3095         14.142         451.28         10           OG         FEED         10         270.85         332         393.15         58.795         85.479         156.05         27.031           OG         Diff (1-2)         -252.2         -112 <td></td> <td>Diff</td> <td>(1-2)</td> <td>221.36</td> <td>1040.7</td> <td>1860</td> <td>331.7</td> <td>474.73</td> <td>833.12</td> <td>367.72</td>		Diff	(1-2)	221.36	1040.7	1860	331.7	474.73	833.12	367.72
pcb_1260         FEED         10         114.55         144.96         175.37         29.245         42.517         77.62         13.445           pcb_1260         Diff (1-2)         -175.6         -106         -36.31         28.198         40.356         70.822         31.26           toc         BULK         2         12053         27300         42547         757.14         1697.1         54153         1200           toc         FEED         10         20471         26500         32529         5797         8427.9         15386         2665.1           toc         Diff (1-2)         -13030         800         14630         5599.1         8013.4         14063         6207.1           OG         BULK         2         92.938         220         347.06         6.3095         14.142         451.28         10           OG         FEED         10         270.85         332         393.15         58.795         85.479         156.05         27.031           OG         Diff (1-2)         -252.2         -112         28.171         56.747         81.216         142.53         62.909           TRPH         BULK         2         121.47         185 <td></td> <td></td> <td></td> <td></td> <td>39</td> <td></td> <td></td> <td></td> <td></td> <td>2.9</td>					39					2.9
pcb_1260         Diff (1-2)         -175.6         -106         -36.31         28.198         40.356         70.822         31.26           toc         BULK         2         12053         27300         42547         757.14         1697.1         54153         1200           toc         FEED         10         20471         26500         32529         5797         8427.9         15386         2665.1           toc         Diff (1-2)         -13030         800         14630         5599.1         8013.4         14063         6207.1           OG         BULK         2         92.938         220         347.06         6.3095         14.142         451.28         10           OG         FEED         10         270.85         332         393.15         58.795         85.479         156.05         27.031           OG         Diff (1-2)         -252.2         -112         28.171         56.747         81.216         142.53         62.909           TRPH         BULK         2         121.47         185         248.53         3.1548         7.0711         225.64         5           TRPH         FED         10         209.04         259         <										13.445
toc         BULK         2         12053         27300         42547         757.14         1697.1         54153         1200           toc         FEED         10         20471         26500         32529         5797         8427.9         15386         2665.1           toc         Diff (1-2)         -13030         800         14630         5599.1         8013.4         14063         6207.1           OG         BULK         2         92.938         220         347.06         6.3095         14.142         451.28         10           OG         FEED         10         270.85         332         393.15         58.795         85.479         156.05         27.031           OG         Diff (1-2)         -252.2         -112         28.171         56.747         81.216         142.53         62.909           TRPH         BULK         2         121.47         185         248.53         3.1548         7.0711         225.64         5           TRPH         FEED         10         209.04         259         308.96         48.034         69.833         127.49         22.083										31.26
toc         FEED         10         20471         26500         32529         5797         8427.9         15386         2665.1           toc         Diff (1-2)         -13030         800         14630         5599.1         8013.4         14063         6207.1           OG         BULK         2         92.938         220         347.06         6.3095         14.142         451.28         10           OG         FEED         10         270.85         332         393.15         58.795         85.479         156.05         27.031           OG         Diff (1-2)         -252.2         -112         28.171         56.747         81.216         142.53         62.909           TRPH         BULK         2         121.47         185         248.53         3.1548         7.0711         225.64         5           TRPH         FEED         10         209.04         259         308.96         48.034         69.833         127.49         22.083	ı –     –									1200
toc         Diff (1-2)         -13030         800         14630         5599.1         8013.4         14063         6207.1           OG         BULK         2         92.938         220         347.06         6.3095         14.142         451.28         10           OG         FEED         10         270.85         332         393.15         58.795         85.479         156.05         27.031           OG         Diff (1-2)         -252.2         -112         28.171         56.747         81.216         142.53         62.909           TRPH         BULK         2         121.47         185         248.53         3.1548         7.0711         225.64         5           TRPH         FEED         10         209.04         259         308.96         48.034         69.833         127.49         22.083										2665.1
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TRPH BULK 2 121.47 185 248.53 3.1548 7.0711 225.64 5 TRPH FEED 10 209.04 259 308.96 48.034 69.833 127.49 22.083										62.909
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										22.083
	TRPH			-188.4	-74	40.406	46.316	66.287	116.33	51.346
								–		

Table B8
Bulk and Feed T-Test Results

Variab	le Method	Variances	DF	t Value	Pr >  t
AS	Pooled	Equal	10	-0.88	0.3987
AS	Satterthwaite	Unequal	10	-1.94	0.0807
CD	Pooled	Equal	10	0.19	0.8551
CD	Satterthwaite	Unequal	9.12	0.43	0.6744
CR	Pooled	Equal	10	-0.93	0.3718
CR	Satterthwaite	Unequal	9.72	-2.12	0.0608
CU	Pooled	Equal	10	-0.52	0.6171
CU	Satterthwaite	Unequal	2.34	-0.73	0.5313
PB	Pooled	Equal	10	0.22	0.8300
PB	Satterthwaite	Unequal	9.61	0.50	0.6268
HG	Pooled	Equal	10	0.86	0.4110
HG	Satterthwaite	Unequal	9.04	1.99	0.0775
NI	Pooled	Equal	10	-1.44	0.1817
NI	Satterthwaite	Unequal	10	-3.16	0.0101
SE	Pooled	Equal	10	-0.09	0.9324
SE	Satterthwaite	Unequal	9	-0.20	0.8443
AG	Pooled	Equal	10	1.41	0.1894
AG	Satterthwaite	Unequal	1.07	0.76	0.5798
ZN	Pooled	Equal	10	-0.28	0.7878
ZN	Satterthwaite	Unequal	9.83	-0.62	0.5474
BA	Pooled	Equal	10	-1.20	0.2594
BA	Satterthwaite	Unequal	9.98	-2.62	0.0257
pcb_12	42 Pooled	Equal	10	2.83	0.0178
pcb_12	42 Satterthwaite	Unequal	9.62	6.45	<.0001
pcb_12		Equal	10	-3.39	0.0069
pcb_12	60 Satterthwaite	Unequal	9.67	-7.70	<.0001
toc	Pooled	Equal	10	0.13	0.9000
toc	Satterthwaite	Unequal	9.5	0.27	0.7902
OG	Pooled	Equal	10	-1.78	0.1054
OG	Satterthwaite	Unequal	9.95	-3.89	0.0031
TRPH	Pooled	Equal	10	-1.44	0.1801
TRPH	Satterthwaite	Unequal	9.72	-3.27	0.0088

Table B9
Bulk and Feed Equality of Variances Test Results

<u>Variable</u>	Method	Num DF	Den DF	F Value	Pr > F
AS	Folded F	9	1	43.50	0.2343
CD	Folded F	9	1	725.01	0.0576
CR	Folded F	9	1	97.51	0.1569
CU	Folded F	9	1	2.77	0.8739
PB	Folded F	9	1	120.16	0.1414
HG	Folded F	9	1	2044.94	0.0343
NI	Folded F	9	1	43.37	0.2347
SE	Folded F	9	1	71613.0	<.0001
AG	Folded F	1	9	5.98	0.0741
ZN	Folded F	9	1	77.04	0.1764
ВА	Folded F	9	1	39.04	0.2472
pcb 1242	Folded F	9	1	118.42	0.1424
pcb 1260	Folded F	9	1	107.47	0.1495
toc	Folded F	9	1	24.66	0.3102
OG	Folded F	9	1	36.53	0.2555
TRPH	Folded F	9	1	97.53	0.1569

# Appendix C Chemical Analysis Sample Listing, Data Validation, Raw Data Sheets

Sample/Analyte	TOC/TVS/O&G/TRPH	PCBs	PAHs	Metals	Soot
		mo	1		10000
GB Underflow 1400-1715 (-1, -2) (solids)	90838-47	90808-17	N/A	90823-32	
GB Feed 1400-1715-1 (solids)	90848-52	90818-22	N/A	90833-37	
GB Feed 1400-1715-2 (solids)	90954-58	90924-28	N/A	90939-43	
GB Overflow 1400-1715 (-1, -2) (solids)	90944-53	90914-23	N/A	90929-38	
GB Overflow 1400-1715 -1 (supernatant)		90853-57	N/A	90904,6,8,10,12	
GB Overflow 1400-1715 -2 (supernatant)		90883-87	N/A	90905,7,9,11,13	
GB Feed 1400-1715 -1 (supernatant)		90858-62	N/A	90894,6,8,900,02	
GB Feed 1400-1715 -2 (supernatant)		90888-92	N/A	90895,7,9,901,03	
Supply Water		90789	N/A	90893	
MetPro Underflow	92103-4	92099-100	N/A	92107-8	
MetPro Overflow	92105-6	92101-2	N/A	92109-10	
MetPro Underflow Supernatant		92111	N/A	92113	
MetPro Overflow Supernatant		92112	N/A	92114	
Soot Samples					92455-514
Carbon Treated Supernatant		92412	N/A	92413	
	Cell 4 Char	acterization			
Cell 4, Bulk A,B	89589-90	89587-88	89591-92	89585-6	90795-802
Cell 4 Sand 1,2	93027-28	93023-24	N/A	93019-20	
Silt/Clay 1,2	93029-30	93025-26	N/A	93021-22	
Clay 1,2 Cell 4	94943-4	94940-1	N/A	94937-8	
Silt Cell 4	94945	94942	N/A	94939	
Soot Samples					89607-18
	Cell 5 Char	acterization		<u> </u>	
Bulk 1,2,3	89331-33	89343-45	89349-51	89337-39	
3ulk 4,5	89334-36	89346-48	89352-54	89340-42	
Bulk 1,2,3 <75um	89375-76	89379-80	89383-84	89371-72	
Bulk 1,2,3 >75um	89377-78	89381-82	89385-86	89373-74	
Bulk 1,2,3 >2.0 sp.gr.	89729	89725	89727	89723	
Bulk 1,2,3 <2.0 sp.gr.	89730	89726	89728	89724	
Wastewater		96653		96652	

Table C2 Data Validation Summary							
Green Bay Physical Separation Samples - ECB Lab ID #s	oles - ECB Lab ID #s						
Sample/Analyte	Metals	No. of Samples	No. of Analytes	Precision 1	Accuracy 2	Completeness 3	Total Tests 4
DEMO	GROUP TOTALS			%6.66	97.3%	97.1%	
					TESTS COMPLETED		
GB Underflow 1400-1715 (-1, -2) (solids)	90823-32	10	14	140	140	140	140
GB Feed 1400-1715-1 (solids)	90833-37	2	14	70	70	70	70
GB Feed 1400-1715-2 (solids)	90939-43	2	15	75	75	75	75
GB Overflow 1400-1715 (-1, -2) (solids) 90929-38		10	15	150	150	150	150
GB Overflow 1400-1715 -1 (supernatant) GB Overflow 1400-1715 -2 (supernatant)	90904,6,8,10,12						
GB Feed 1400-1715 -1 (supernatant)	90894,6,8,900,02						
GB Feed 1400-1715 -2 (supernatant)	90895,7,9,901,03						
Supply Water	90893	21	15	315	294	294	315
Carbon Treated Supernatant	92413	τ-	41	13	14	13	14
	GROUP SUM			763	743	742	764
CELL 4 CHARACTERIZATION	GROUP TOTALS			92.1%	100.0%	92.1%	
					TESTS COMPLETED		
Cell 4, Bulk A,B	89585-6	2	15	28	30	28	30
Cell 4 Sand 1,2	93019-20	2	13		26	22	26
Silt/Clay 1,2	93021-22	2	13		26	22	26
Clay 1,2 Cell 4	94937-38	2	15	30	30	30	30
Silt Cell 4	94939	τ-	15	15	15	15	15
	MINGE			117	197	117	127
	GNOOF SOM			,	12.1	1	77

Table C2 (Concluded)							
Green Bay Physical Separation Samples - ECB Lab	oles - ECB Lab ID #s						
Sample/Analyte	Metals	No. of Samples	No. of Analytes Precision 1 Accuracy 2	Precision 1		Completeness 3 Total Tests 4	Total Tests 4
CELL 5 CHARACTERIZATION	GROUP TOTALS			%9'.26	100.0%	%9.76	
					TESTS COMPLETED		
Bulk 1,2,3	89337-39	3	14	42	42	42	42
Bulk 4,5	89340-42	3	14	42	42	42	42
Bulk 1,2,3 <75um	89371-72	4	4	52	56	52	56
Bulk 1,2,3 >75um	89373-74						
Bulk 1,2,3 >2.0 sp.gr.	89723	2	15	30	30	30	90
Bulk 1,2,3 <2.0 sp.gr.	89724						
	GROUP SUM				170	166	170

Precision 1 The number of tests completed whose relative percent differences (RPDs) fell within the test's acceptance criteria.

Accuracy 2 The number of tests completed whose percent recoveries (% R) fell within the test's acceptance criteria.

Completeness 3 The number of tests completed or that had acceptable QC including 1 and 2 above. Total Tests 4 The number of analytes multiplied by the number of samples.

TIMe Project Name CACES	Remarks:
Time Press. 2 8 11.0 Code/Sample Number None Code/Sample Number None Code/Sample Number None Code/Sample Number Nu	
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16.56 X 6.8; EED 3 X	
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elinquished by: (Sig.) Date/Time Received by: (Sig.) Date/Time	
Relinquished by: (Sig) Date/Time Received for Laboratory by: (Sig.)	Remarks at time of receipt:
Sustody Seal No.	
ENG Form 5021-R, Oct 90	Proponent: CEMP-RT

U.S. Army Corps of E	bs	ngine	ers				,	Chain of Custody-Record
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8/0/50 12 x	X		MATER			\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		
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9	JOB J	ESCOIDTION							v		
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		COLUMN		1	2	3					
		ANALYTE. MG/KG			100	104					
c	SAMP #		••••	100	O&G	TRPH					
		DESCRIPTION									
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	MG/KG			4	5	6 '	7	8	
SAMP #	DESCRIPTION					ш	PB	HG	
onco.									
89337	BULK 1,2,3-1		3.28	0.895	52.9	1 51.7	63.2	0.965	
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89339	BULK 1,2,3-3	COMC	2.79	0.858	47.2	49.3	1 65.6	0.997	
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	GB/BP CDF	DUPL	Orbina ma			L	become of	i	- 1
		019	01260172	HGA AUTE	41260172 MSA AUTH	01260172 HGA AUTH	91264172 864 AUTH	04650160	j
89340	BULK 4,5-1	CONC	3.28	1 0.875	51.8	47.6	63.1	1 1.02	1
	5/26/00 15:30 68/8P CDF	MEC		1		t	1	i	- 2
	POLES CD4	DUPL OID	01260172			F	1	i i	i
		0.0	01200172	101260172 HGA AUTH	01260172 85A AUTH	101260172 HGA AUTH	91250172 85A AUTH	04650168	1
89341	BULK 4,5-2	CONC	3.10	0.871	49.9	1 48.7	1 66.1		
	5/26/00 15:30	WEC		1	200		1 00.1	1.03	
	DB/EP CDF	DIAL	2015000	December 3		i.	4	1	1
		ath	01260172	86A AUTH	01260172 HGA AUTH	01260172 HSA AUTH	01260172 NGA AUTH	04650168	i
89342	BULK 4,5-3	DONE	3,48	1.07	58.3	1 50.5	1 77.1	1.00	4
	5/26/00 15:30	TREE		1			1	1.00	1
	GR/BP COF	DEPL	01365479	!!	22000	1	1	i	i
		COLD	01260172	MGA AUTH	01260172 HGA AUTH	FGA AUTH	01260172 HGA AUTH	04650168	1
AS	Arsenic				500000000		THE PARTY		
CR	Chronium					divium			
PB	Leaf					pper- roury			
7									

	DESCRIPTION: GREE	N BAY	MOBILE TRIMI	PLA	NT -OLIN-ESTES		NUMBER: 0054PD-9		RECEIPT DATE: (	
CHEM. PI	RESERVATIVE:					TYPE OF	SAMPLE: SEDIMENT		APLETION DATE: 2	22 JUN
	COLUMN				2	3 5	4 6	5 7	6 8	
	MG/KG				CD	CR	cu	PB	HG	
SAMP #	DESCRIPTION									R
BL#01	METHOD BLANK 01	CONC	<0.200	1	<0.020	<0.100	0.200	<0.100	<0.040	1
		<b>X</b> REC		į						į
		DUPL	01260172	ļ	01260172	01260172	01260172	01260172	   04650168	I I
				,	HGA AUTH	HGA AUTH	HGA AUTH	HGA AUTH	•	•
BL#02	LCS 01	CONC	4.30	ł	2.40	9.90	10.2	5.80	0.0757	}
		%REC	86.0		100.4	99.1	102.0	116.8	100.9	į
		DUPL 01D	01260172		01260172 Hga auth	1   01260172   HGA AUTH	01260172 HGA AUTH	01260172 HGA AUTH	04650168	i
BL#03	EXTERNAL QC 01	CONC	76.8	ı	32.2	12.4	87.5	[ 1150	0.050	ı
		XREC DUPL		- 1		!		Í	1	ļ
		OID	01260172	-	01260172 HGA AUTH	01260172 HGA AUTH	01260172 HGA AUTH	01260172 HGA AUTH	04650168	
AS	Arsenic					CD C	admium			
CR PB	Chromium Lead					CU C	opper ercury		*	
r B	Leau	,		. ;		HG M	ercury	//		
							•			
				100						
				-						
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	,									
				- 1						

J08 F1	LE: 89337												
												DATES	27 .
******			DIVIRGINERTA	K t	HURISTRY BRAN	ЮН	- DATA REPO	MTTHE	CHEST / PAI	E 3 07 6 1			
						200	ments and	MILITAL.	SMEET C PAG	E Jur o ,	**********	******	*****
J08	DESCRIPTION: G	REEN BA	Y MODILE TRIM	a p	LANT -CLIN-ES	Tes		T PLAN	ts: 0054PD-	********	12.00		
CAEM, 1	PRESCRIVATIVE:				(Ellips)				LE: SEDIMEN		RECEIPT COMPLETION	DATE	02 a 27 a
	COLUMN.				8				10	11	12		
	ANALYTE.				10		11		13	25	30		
	MG/KG	******	. VI		50		AG		214	BA	14		
SAMP #	DESCRIPTION												
89337	BULK 1,2,3-1	CONC	21.2		1 0.895		1 0.397		150				
	5/30/00 10:30	MEC	67.8		82.0		83.4		93.2	103.6	1670	_	- 1
21.0	ca/go cor	DUPL	20.6		0.095		0,497	i	153	1 65.3	1700	7.	1
21.5		610	01260172		01260172		01260172	8 i	01260173	01260172			
			HEA AUTH				NEA AUTH	8		100			
89338	BULK 1,2,3-2		24.4		1.00		0.501	1	142	1 92.0	1 2700		
	5/30/00 10:30	MRED			i .		1	j		1 *****	1730		- 1
	ED/AP CDF	90PL	#13454A				1	- 1		i			1
		410	HEA AUTH		01260172		85A AUTH	- 1	01260173	01260172	01260	1173	i
89359	BULK 1,2,3-3	CONC	19.3		0.898		0.399	2.4	138	1 20 4	-1910-01		
	5/30/00 10:30	MREC						1	130	75.9	14900	1	1
	GB/SF CDF	DUPL				ì	İ	1					1
		010	01260172 HGA AUTH	P	01260172		01260172 REA AUTH	i	01260173	01260172	01260	173	i
89340	BULE 4,5-1	CONC	20.0		1.69					110			
	5/26/00 15:30	1860			1.00		0.597	1	133	80.9	16400		1
	GE/SP COF	DUPL		1				1		1			1
		010	01260172 HGA AUTH	-	01200172	į	01260172 95A AUTH	i	01260173	01260172	01260	173	i
89341	BULK 4,5-2	CONC	19.7	1	1,10	1	0.400	14	139	250	500000		6
	5/26/00 15:30	REC		1		i	3.400	1	139	75.3	15000		1
	08/8P CDF	DUPL.	200000	i		j	San Const.	1		1	1		
		910	01260172	1	91260172	i	01260172	i	27109510	01260172	012601	173	
			HGA AUTH				HOA AUTH						
89342	BULK 4,5-3	COMC	21.9	1	0.995	I	0.597	1.	154	1 88.9	1 1/500		
	5/26/00 15:30 GB/BP CDF	TREC		1		1		1			1		18
	and the said	DUPL	01260172	I	01240172	1	#174F147	1		N. Constant	i		i
			MGA AUTH	1	01260172	1	86A AUTH	13	1260173	E11260172	012601	73	1
ME	Nickel						SI 8	eleniu					
AG	Silver						CO	inc.					
BA	Bartus					-		ron					

JOS FI	LE: 89337				+%	4	•		
								DATE:	22
			ENVIRONMENTAL	CHEMISTRY BRANCH	- DATA REP	ORTING SHEET (	PMGE 4 0F 6-3		
100	DESCRIPTION: GRE	CEV BAY	MORNE TREAT	PLANT -DLIN-ESTES					
CHEM.	PRESERVATIVE		The second	Personal Personal Property of the Personal Pro		OR HUMBER: 035 OF EARPLE: SEG	4P0-92510183 CHENT	RECEIPT DATE: COMPLETION DATE:	02 22
	COLUMN		7	8	9	10	11	12	
	MG/KG		W.	10 SE	40	13	25	30	
SAMP #					***	2.6	AB	16	
61,601	METHOD BLANK OF	COME	<0.100	(0.200	1 -0 100	E STATE OF	40.000		
		TREC	781.100	19.200	0.100	<1.00	<0.100	<2.00	
		DUPL	***********	F	Í	. 1	. J		16
fi e		019	91250172 HGA AUTH	1 01260172	91260172 95A AUTE		73   61260172	01260173	
BTAGS	LCS 01	COMO		1 1.90	2.48	1 20.0	1 24.7	1.00 -	
		TOREC	105.0	74.4	95.6	80.0	98.8	1 110.0	
		DUPL, OID	01260172	01260172	01260172		j		1
		0.402	NGA AUTH	I elegativ	MEA AUTH	1	3   91260173	01260173	
81403	EXTERNAL OC 01	DOMO	13.0	1.69	1 3.58	1 274	1 182	13600	
		DUPL		1			. 1	12000	- 1
		OID	01260172	01240172	01260172	3 3	-	4	i
			NGA AUTH	1 Present	HER WITH	C. A. Charles	3   01260173	01260173	1
MI	Hickor).				52	Selenium			
AG BA	Silver				2 N	Zins			
	Borius.				FE	Iron			
							2.		

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JOS FILE: 89337
                                                                                               DATE: 22 JUN
  ENVIRONMENTAL CHEMISTRY BRANCH - DATA REPORTENG SHEET ( PAGE 6 OF 6 )
    JOS DESCRIPTION: GREEN BAY MORILE TRINT PLANT -OLIN-ESTES
                                                          JOB HUNGER: 005-485-92310163
                                                                                        RECEIPT DATE: DZ JUN
  CHEM, PRESERVATIVE!
                                                                                      COMPLETION SATE: 22 JUN
                                                       TYPE OF SAMPLE: SEDIMENT
              16
              AKALYTE..... 32
                                        35
              MG/KG..... MX
                                        MD
  SAMP # DESCRIPTION
        METHOD BLANK DT CONC 40.100
                                       40,100
                       DESC
                       SUPL
                       010 01260173
                                       01250172
                            KTUA AZN
50
 8L#02 LCS 01
                       COWC 9.90
                                        4.50
                       THEE 99.4
                                         90.0
                       DUPL.
                       010 01260173
                                        01260172
                            HIGA WUTTH
  81,403
         EXTERNAL OC 01 CONC 452
                                       0.299
                       MEG
                       SUPL
                       010 01260173
                                       01260172
                            BTUS, ADR
          Manganese
                                                    HO.
                                                            Wollytsdenus
                                                   14
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los True: 89343 DATE: 16 JUN E ENVIRONMENTAL CHEMISTRY BRANCH - DATA REPORTING SHEET ( PAGE 1 DF 4 ) DESCRIPTION: GREEN BAY MOBILE TRIMI PLANT -OLIN-ESTES JOB NUMBER: 0054P0-92310183 RECEIPT DATE: OF JUN C COMPLETION DATE: 16 JUN 5 CHEM. PRESERVATIVE: TYPE OF SAMPLE: SEDIMENT 2 3 5 142 139 140 161 138 AMALYTE ..... 137 PCB-1254 PCB-1232 PC8-1242 PCB-1248 UG/KG..... PCB-1016 PC8-1221 BC. SAMP # DESCRIPTION 1 424.8 1261 <24.6 -24.8 CONT <24.8 <24.8 BULK 1,2,3-1 89343 5/30/00 10:30 TRUC 111.6 GB/BP CDF DUPL. 54830166 54830166 54830166 \$4830166 GOD 54830166 54830166 1 1083 24.3 426.3 BULK 1,2,3-2 DONC <24.3 <24.3 424.3 89344 BARC 5/30/00 10:30 GB/BP COF BUPL 54830166 54830166 54830156 54830166 1 14830166 54830166 OID 24.8 11140 <24.8 <24.8 <24.8 COMC +24.8 89345 BULK 1,2,3-3 5/30/00 10:30 MREC GB/BP COF DUPL 54830166 54830166 54830166 54830166 54830166 54830166 010 122.4 1 1160 42.4 89346 BULK 4,5-1 DOSE 92.4 <22.4 <22.3 5/26/00 15:30 MRED EB/8P CDF DUPL 54830166 54830166 54830166 54830166 ato 54830166 54830166 425.0 1 <23.0 <23.0 <23.0 425.0 1378 89347 BULK 4,5-2 DOAC 5/26/00 15:30 BREC 68/8P COT DUPL 54830166 54830166 54830166 54830166 54830166 54830166 030 1384 422.1 <22.1 <22.1 COMC <22.1 89346 BULK 4,5-3 1 422.1 5/26/00 15:30 3250 CB/BP COF DUPL. 54830166 54830166 54830166 010 54530166 54830166 \$4852166 PC8-1016 PC8-1016 PCB-1221 PCB-1221 PCB-1242 PCB-1242 PCS-1232 PCB-1232 PEB-1254 PCB-1254 PCE-1248 PCE-1248

					+40	4			
	4								
106 Y1LE	89343							DATE:	16 334
		:	NVERCONNEXTAL	CHEMISTRY BRANCH -	DATA REPORTIN	S SHEET ( PAGE	2 OF 4 3 ****		
	ESCRIPTION: GREE ESERVATIVE:	N BAY	MOGILE TRIME	PLANT -OLIN-ESTES		MBER: 0054PO-92 MPLE: BEGIMENT		RECEIPT DATE: PLETION DATE:	
	COLUMN			2 138	3 139	146	5 141	6 142	
	UG/KG		PCR-1016	PCB-1221	PC6-1232	PC8-1242	PC8-1248	PCS-1254	
SAMP #	DESCRIPTION								
81,901	METHOD BLANK 61	SONG SEC	<8.33	45.53	48.33	<8.33	<8.33	1 <0.33	1
		DUPL	54830166	54830166	1 54830166	54830166	54830166	54830166	i
81.802	une ht	Prose	0.82	1 8/A	I N/A	I N/A	I M/A	1 N/A	1:
BERGS	LCS DI	TARBE	98.4	1 ""	1	1	1	1	į.
		010	54830166	54830166	54830166	54830166	54830166	54830166	i
ere-1016	PC8-1016				PC9-1221 PCI	1-1225			
PCB-1232	PGB-1232 PGB-1268				PC8-1242 PC8 PC8-1254 PC8	1-1262			
+									
		-	_						

Jos Frie	89545							DATE:	16 30
			WYTROMMENTAL	CHEMISTRY BRANCH -	DATA REPORTING	SHEET	C PAGE 3 OF	٤ ,	
		Violenta.				2,500,500	La series com		
	ESCRIPTION: GRE ESERVATIVE:	EN BAT	HORILE TRIMT	PLANT -OLIN-ESTES	JOS NUR TYPE OF SAM		0054PO-92\$10183 SEDUMENT	RECEIPT DATE: COMPLETION DATE:	
	COLUMN			8	9				
	ANALYTE		143 PCB-1260	145 TelXYL-S	146 DCLBP				
#	DESCRIPTION		Mark transco	ST STATE SOURCE	Accounts				
					2020000	200			
89343	SULK 1,2,3-1 5/30/00 10:30		47.9 88.4	78.4X 84.5	75.3%	1			
	GA/RP CDF	DUPL			i	i			
		010	54830161	54830161	54830166	1			
89544	BULK 1,2,3-2	CONC	66.B	63,13	73.8%	1			
	5/30/00 10:30	tage				į			
	GB/RP CDF	DIPL	54830161	54830161	54830166	1			
				1000000	**********	760			
89345	BULK 1,2,3-3		42.2	85.1%	77.4X	1			
	5/30/00 10:30 SB/SP CDF	DUPL			1	1			
	48/5		54830161	54839161	54830166	Ť			
89344	BULK 4,5-1	CONE	39.5	75.5X	72.7%	1			
0100	5/26/00 15:30	MREC				1			
	EB/SP CDF	DID	54830161	34830161	54830166	î			
	57 <b>4</b> (1976) 2021			790000	2222	20			
89347	SULE 4,5-2 5/26/00 15:30	CONC	61.8	85.1%	76.9%	1			
	CR/SP CDF	DUPL				1			
		015	54830161	54830161	54830166				
89348	BULE 4,5/3	COAC	47.3	65.9%	80.3%	1			
	5/26/00 15:30	THEC			1	Ţ			
	GR/RP CDF	DUPL	54830161	54830161	54830166	i			
POR 120					Televis 2.4	5 A.T	ateach) one as well as	netSurrogate(60-150 WS	
DOLEP.	Decachtorobips	enyi (9	urrogate (60-	150 WS))	Jeseir a cha	isto.	atrachity a st system	and the same of th	

+ BATE: 16 JUN I JOB FILE: 89343 JOB NUMBER: 0054PD-92310183 RECEIPT DATE: 02 JUN ( JOB DESCRIPTION: GREEN BAY MOBILE TRINT PLANT -OLIN-ESTES" COMPLETION DATE: 16 JUN C TYPE OF SAMPLE: SEDIMENT CHEM. PRESERVATIVE: COLUMN ..... 7 145 146 AMALYTE..... 143 UG/KG..... PCB-1760 TelXfL+5 DOLEF RC. SAMP # DESCRIPTION METHOD BLANK G1 DONG <8.33 87.1% 81.1% BREG DUPL 54830166 010 54830161 54830161 BL#02 LCS 01 CDMC 0.87 77.4% 78.6% 188C 104.4 DUPL 54830161 010 54830161 54830166 TolKYL-S 2,4,5,6-Tetrachioro-m-xylenetSurrogatet60-150 W8 PCB-1260 PCB-1260 DCLBF Decachlorobiphonyl(Surrogate (60-150 WE))

Job Description	on: Green Bay Mobile	Frimit Plant - Olin-Es	tes Jo	b File Number: 89343
	ECB Quali	ty Assurance	Corrective Action	on Form
Analysis:	PC8	142		15-June-00
Analyst:	A. Morrow		Instrument:	5890 #83 GC
Problem:	There is PCB's pre-	ent, not sure if it is	1242 or 1248	
Sample Nu	mber(s) Affected:	89343-89348		
Recommen	ded Corrective Action:	Report as 1242	and do further study.	
restacesso		11 10 10 10 10 10 10 10 10 10 10 10 10 1		
		123		
				171
Corrective A	Action Taken By Analys	t: Same as above.		M.
2011			30 <b>4</b> 0000	
Comments:	There will be further qualitatively identify			filate and
Date Correc	tive Action Taken	15-June-00		
Reviewed b	N	or tuesas		

Jobfile Number: 89343
Project: GREEN BAY MOBILE TRIMT PLANT -OLIN-ESTES
Account Number: 0054PD-92310183
Date Received: 02 JUN 00

Job#	Sample	Tst	Analyte	* REC	* SDUPL	RPD	OID
				*******			
89343	89343	137	PCB-1016	111.6	77.2	36.4	54830166
89343	89343	143	PCB-1260	88.4	85.2	3.7	54830161
89343	89343	145	TclXYL-S	84.5	80.5	4.8	54830161
89343	89343	146	DCLBP	71.6	73.0	1.9	54830166

Page 1

END OF REPORT

DY 6-132 ENVIRONMENTAL CHEMISTRY BRANCH - DATA REPORTING SHEET ( PAGE 1 OF B) 408 FILST 89749 JOB DESCRIPTION: GREEN BAY MOBILE TRIMT PLANT -CLIN-ESTES JOB MUMBER: 0054PD-92310183 RECEIPT DATE: 02 JUN CHEM. PRESERVATIVE: TYPE OF SAMPLE: SEDENENT COMPLETION DATE: 13 JUN 2. COLUMN ..... 1 2 5 AMALYTE..... 290 294 295 297 303 304 UG/KG ..... MAPRITS ACTIVAT FLUCRE ACCHAR PHENN ANTRAC SAMP # DESCRIPTION 89540 BULK 1,2,3-1 DONE 163 10.3 1 19 3 40.0 750 45.9 5/30/00 10:30 MREC GH/SP CDF DUPL 08890160 | 08890160 oto 08870160 08/990160 68990160 1 44.9 275 89350 BULK 1,2,3-2 DOME 195 1 11 0 1 22.0 59.7 5/30/00 10:30 SMEC 5878P COF DUPL. 08890160 86890160 | 088901A0 08890165 010 06890160 08890160 89351 BULK 1,2,3-3 CONC 138 18.9 4 23.8 1 42.6 1 275 52.5 5/30/00 10:30 TREC 18/8P COF DUPL 010 DIMPOTAD | dataydted 98899188 08890160 05890166 08890160 89352 BULK 4,5-1 CONC 157 9.8.3 1 15 4 38.5 1 213 35.6 5/26/00 15:30 TREC. GB/EF COF DUPL 010 06890160 08890160 03890160 08890160 08890160 08890160 89353 **BULE 4,5-2** CONC 113 1 8.2 4 1 14 4 33.0 218 60.3 5/26/00 15:33 SEEC. GR/RP CDF DUPL 010 05590160 08890160 08890160 08890168 08890160 08890160 89354 BULK 4,5-3 CONC 104 9.0 2 1 15 4 \$7.0 229 45.4 5/26/00 15:30 WEG 90.0 74.0 79.5 89.0 102.5 90.0 GB/3P CDF DUPL 010 08890160 08109880 1 05890160 08890160 08890160 08890160 NAPETH Raphthallene ACEKAY Acensphithyliene ACENAP Acenophthene FLUCKE Fluorene PHERAM Phenanthrene ANTEND Anthracene

G= 89760							DATE:	13 4
••••••	*****	EAVERDMENTAL	CHEMISTRY BRANCH	+ DATA REPORT		201 83*		
DESCRIPTION: GRE	EH BAY	MORELE TRYM	trast on the core					
PRESERVATIVE:					SAMPLE: SEDIMENT		COMPLETION DATE:	13 70
COLUMN		7	2	3	4	3		
			ACENAY	ACEMAP	297 FLUORE		304 ANTRAE	
06504163104								
METHOD BLANK 01	COME	410	1 +10	1-410	1 *10	The same	1.00	
	THEC		1	1	1	1	I viu	- 1
	010	03890160	08890160	(00090160	08890160	08090160	08890160	-
								10
LES D1			64.0	76.0	80.5	j 83.5	1 85.5	1
	DUPL	04.3	04.0	76.0	80,5	1 68.5	85.5	İ
	Ofb	08890160	05890160	03890160	05890160	08890160	08890160	1
Manhthalene				APPRILITY	20022000			
Acenophthene								
Phenanthrane				ANTRAC An	Chrasena			
				9				
					1.00			
	DESCRIPTION: GRE RESERVATIVE:  COLUMN AMALYTE LE/KG  DESCRIPTION  METHOD BLAME 01  LES D1  Maphthalerse	DESCRIPTION: GREEN BAY RESERVATIVE:  COLUMN	COLUMN TAMESTALE TATAL  DESCRIPTION: GREEN HAT MOBILE TRIMI  RESERVATIVE:  COLUMN TAMESTALE SPO UE/KG	CONTRACTOR CAVERDMENTAL CREMISTRY BRANCH  DESCRIPTION: GREEN BAY MOBILE TRINT PLANT -GLIN-ESTER  RESERVATIVE:  COLUMN	### CAVERDMENTAL CREMISTRY BRANCH - CATA REPORT  ###################################	### BOSES   CALCULATION   CALC	SAME   SAME	SCREEN FILES   SALE
+ JOS FELES B9549 DATE: 13 JUS ENVIRONMENTAL CHEMISTRY BRANCH - GAIA REPORTING SARET ( PAGE 3 OF 5 ) JOS DESCRIPTION: GREEN BAY MOBILE TRINT PLANT -DLIN-CSTES JOB MUMBER: 0054P9-92510183 RECEIPT DATE: DZ JUN CHEM, PRESERVATIVE: TYPE OF SAMPLE: SEDEMENT COMPLETION DATE: 13 JUN CDLUMS..... 7 8 9. 11 12 AMALYTE..... 306 307 309 310 313 314 UG/KG..... FLANTRE PTRENE CHRISE BANKE BBFLANT BEFLANT SAME # DESCRIPTION 89349 BULK 1,2,1-1 COMC 417 369 253 187 186 1 147 5/30/00 10:30 MILL **GB/BP CDF** DUPL OID. 00090160 08890160 (88970160 08890160 08890160 68890160 89350 BULK 1,2,3-2 COMC 388 463 1 272 197 145 143 5/30/00 10:30 WHEC GR/SF CDF DUPL 010 68890160 USSPOTAG 08/09/01 068990160 08890160 BULK 1,2,3-3 89351 CONC 399 1 341 218 1 257 149 127 5/30/00 10:30 MREC GR/RP COF DUPL 010 08890160 **CRR90160** 06890160 08390160 06890160 08890160 89352 BULE 4,5+1 CONT 293 290 1 109 131 125 97.6 5/26/00 15:30 MARC 98787 COF DUPL 010 05870160 08890160 06090160 000990160 05090160 08890160 69353 BULK 4,5-2 CONC 327 309 195 146 100 5/76/00 15:30 MREC GB/SP COF DUPL 010 08890160 G8890160 08890160 08890160 08890160 08890160 89354 SIEK 4,5-3 CONC 308 305 193 139 129 96.7 5/24/00 15:30 MRED 132.0 130.0 118.5 161.0 104.5 80.0 GB/9P COF DUPL Q1D 08890160 08890160 08890160 08890160 08890160 08890160 FLANTAE Fluoranthene PTREAT Pyriene CHRESE Chrysene. BAAMTER Benzo(a)Archracene BEFLANT denzo(b)Fluoranthese BKFLAAT Benzo(k)#Lupranthene

IDS FILES BOSGO DATE: 13 JUN JOB DESCRIPTION: GREEN BAY HOBILE TRIM! PLANT -GLIN-ESTES JOB NUMBER: 0054P0-92316183 RECEIPT DATE: 02 JUN CHEM. PRESERVATIVE: TIPE OF SAMPLE: SEDIMENT COMPLETION DATE: 13 JUN COLUMN, ..... 7 10 11 12 ARALYTE..... 306 307 307 310 313 314 US/KG..... FLANTHE PTRENE DIRYSE BARNTHE BUTLANT BEFLANT EAMP # DESCRIPTION METHOD BLANK 01 COMC <10 1 +10 \*10 410 MAEC DUPL. DID 00090160 08890160 08890160 08890160 BLACE LCS Of DINC 91.5 87.0 1 97.5 1 85.0 78.5 85.0 TREE 91.5 87.0 97.5 85.0 78.5 88.0 DUPL 03890160 010 05890160 05890160 08890160 08890160 08890160 FLANTHE Fluorenthere PYRENE Pyrone DRYSE Dirysene **BAANTEE** Bengo(a)Anthracene EBFLAAT Benzo(b)Fluoranthene Benza(k)#Luaranthene - 1

						1, 1944			
			15 70.000,000,000	. Name	AC 00000				
308	GESCRIPTION: GR	EEM BAY	MOBILE TRIM	T PLANT -OLIN-ESTE		UMBER: 0054PD-9	2310183	RECEIPT DATE:	02 )
CHEM. P	RESERVATIVE:				TEPE OF S	MAPLE: SEDIMENT		COMPLETION DATE:	
	2		932					Co-consistent and and	
	COLUMN			16	15	36	17	18	
	ANALYTE.			316	317	318	322	327	
	UG/RG		BAPTRE	1123FTR	DEAHART	B-CHI-PY	29e6628	2FTEP-S	
SAMP #	DESCRIPTION								
89349	BULK 1,2,3-1	CONC	205	1 176	25.4	168	1.443	1.00	
	5/30/00 10:30	2250	1000	1	44.4	1961	162	79.0%	- 1
	69/60 cur	DUPL.		4	1	1		1	1
		010	06890160	08890160	08890154	08890160	0.00000160	DBBFG16D	į
					40-00-000	1	1 0000000	100A0160	1
89350	BULK 1,2,3-2	COAC	207	176	1 30.6	1 tes	1 174	1 76.2%	
	5/30/00 10:30	TORRE		1	1	1		1	1
	GB/SP COF	CUPL		Torran -	1	ř.	1	i	-
		010	08890160	08890160	08890154	06090160	08890160	08890160	í
	2000								
19351	BULK 1,2,3-3	CONE	168	1 143	31.7	165	137	1 72.2%	1
	5/30/00 10:30	MEC		İ	1 2	1	1 ,	1	- 1
	GB/SP CDF	DUPL	*******		House	University of the Control of the Con	A	- Armenia	i
		010	08890160	C6090160	08890154	08890160	00890160	08890160	- î
19352	RULK 4,5-1	2000	145	1 118	1.25.9	1 150	154	1.20.00	
	5/26/00 15:30	SEC	1000	1000	VI	1 100	1 224	74.8X	- 1
	GR/BP COF	DUPL		i i	i	10			1
		CID	08890160	08890160	08899154	05890160	08890160	05890160	
						1 3000	100000	1 cooperati	1
9353	NULK 4,5-2	COAC	152	1 125	27.5	1 148	1 118	67.7%	
	5/26/00 15:30	XREC		1	1	100	0.000		1
	GB/RP CDF	DUPL		Barresson	1	15	Î		1
		010	08890160	08690160	08890154	08890160	08890160	06090160	i
9354	DIEV C C. P	### T	150	1.100	1.000	20000			
	BULK 4,5-3 5/26/00 15:30	CONC		122	25,3	149	1 119	65.9%	1
	69/8P CDF		101.0	106.5	1 95.0	100.5	1 97.5	71.7	1
	coles col	DUPL	*******		1		To the second	I.	1
		010	08890160	08890160	06090154	08890160	08890160	08890160	1
APTRE	Benzal a)Pyrene				1520ws 1 -				
THARAE	Dibenzo(A_H)Ant	Th management	417			ena(1,2,3-c,0)Fyr			
Nelsaput	2-Hethylnaphtha				2F18P-8 2-F	to(S,H,I)Perylend			

+8 96

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DATE: 13 Jun
JOS FILE: 00349
JOS MUMBER: 0054P0-92310183
                                                                                   RECEIPT DATE: 02 JUN
  JOS BESCRIPTION: GREEN GAY MODILE TRINT PLANT -OLIN-ESTES
                                                                                COMPLETION DATE: 13 JUN
                                                  TYPE OF SAMPLE: SEDEMENT
THEM. PRESERVATIVE:
            AMALYTE ...... 328
            UG/KG..... PTERP-S
                                                                                                  11
SAMP # DESCRIPTION
                   DONE 77.7%
       TULK 1,2,3-1
89349
        5/30/00 10:30
                    TREC
        GU/EP COF
                    DUPL
                    otb 65890160
                     COME 92.9%
 89350 BULK 1,2,3-2
        5/30/00 10:30
                    MARC
                     DUPL
        GB/SP CDF
                     010 05890160
                     DOSC 75.4%
 89351
       BURX 1,2,3-3
        5/30/00 10:30
                     THEC
                     DUPL
        98/8P CD1
                          03890160
                     OID
 09352
        BUCK 4,5-1
                     COMC 78.9%
                     TREC
        5/26/00 15:30
        CH/EP COF
                     DUPL.
                     G1D 0889G160
 89353 BULK 4,5-2
                      CONC 76.4%
                     SHEE
        5/26/00 15:30
        GB/EP CDF
                      DUPL
                     01D G889016C
                                                                 5
                                                                                                  12
                      COME 80.5%
        BLEC 6,5-3
  89354
         5/26/00 15:30
                      TREC 79.0
         08/8P CDF
                      DUPL.
                      010 08890160
  PITEP-S p-Terphanyl-D14(Surrogate (18-137-5))
```

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JOB 17151 89349
                                                                                               DATE: 13 JUN
 EWUTROAMENTAL CHEMISTRY BRANCH - DATA REPORTING SHEET ( PAGE 8 OF 8 )
  JOS DESCRIPTION: CREEK MAY MOSTLE TRINT PLANT -D.IN-ESTES
                                                       JOB HUMBER: 0054P0-92310183
                                                                                        RECEIPT DATE: 02 JUN
CHEM. PRESERVATIVES
                                                      TYPE OF SAMPLE: SEDIMENT
                                                                                    COMPLETION DATE: 13 JUN
            COLUMN ...... 19
            ANALYTE ...... 328
            UG/XG..... PTERP-S
SAMP # DESCRIPTION
BLADT METHOD BLANK OT COME 76.6%
                      AREC
                     DLFL
                     010 08890160
8E#02 LCS 01
                     COMC 70.8%
                     MEC
                     DUPL.
                     000 08890160
PTERP-S p-Terphenyl-014(Surrogate (18-137 S))
```

Jobfile Number: 89349
Project: GREEN BAY MOBILE TRIMT PLANT -OLIN-ESTES
Account Number: 0054PD-92310183
Date Received: 02 JUN 00

Job#	Sample	Tot	Analyte	% REC	* SDUPL	RPD	OID
89349	89354	290	NAPHTH	90.0	76.0	16.9	08890160
89349	89354	294	ACENAY	74.0	72.0	2.7	08890160
89349	89354	296	ACENAP	79.5	78.0	1.9	08890160
89349	89354	297	FLUORE	89.0	88.5	0.6	08890160
89349	89354	303	PHENAN	102.5	97.0	5.5	08890160
89349	89354	304	ANTRAC	90.0	90.0	0.0	08890160
B9349	89354	306	FLANTHE	132.0	126.5	4.3	08890160
89349	89354	307	PYRENE	130.0	114.0	13.1	08890160
89349	89354	309	CHRYSE	118.5	105.0	12.1	08890160
89349	89354	310	BAANTHR	101.0	113.5	11.7	08890160
B9349	89354	313	BBFLANT	106.5	98.5	7.8	08890160
89349	89354	314	BKFLANT	80.0	78.0	2.5	08890160
B9349	89354	315	BAPYRE	101.0	93.5	7.7	08890160
89349	89354	316	I123PYR	106.5	103.0	3.3	08890160
89349	89354	317	DBAHANT	95.0	96.0	1.0	08890154
89349	B9354	318	B-GHI-PY	100.5	95.0	5.6	08890160
89349	B9354	322	2MeNAPH	97.5	-83.0	16.1	08890160
89349	89354	327	2F1BP-S	71.7	69.8	2.7	08890160
89349	89354	328	PTERP-S	79.0	81.0	2.5	08890160

Page 1

END OF REPORT

,2M. P	DESCRIPTION: CORE RESORVATIVE:	EN BAY	HOSTLE TANT	PLANT - OLIN-ESI		NUMBER: 005490-9 F SAMPLE: SEDIMENT	441114	RECECPT DATE:	05 JUN 0
	COLUMN		1	2	3	4	5		
	ANALYTE.			4	5	6	7	6	
	MS/KS		AS	CP	CR	Ou	PB	HG	
\$8MP #	DESCRIPTION								*p
89371	BULK 1,2,3	CONC	2.60	0.770	1 43.7	1 45.8	1.000	7737	- 4
	<75UH A 6/2/10		91.4	1 79.4	1 95.4	1 92.4	1 104.2	1 310.0	1
	1300 GB/SF COF	DUPL	2.80	0.950	47.1	1 47.9	1 63.6	1 1.08	1
		010	01260172	01260172	012/0172	01260172	01260172		1
				HGA AUTH	HEA MUTH	HEA, AUTH	HGA AUTH	100000000000000000000000000000000000000	-(1)
89572	BULK 1,2,3	0040	3.30	0.881	59.4	1 43.9	1 56.1	1 0.999	7. 3
	<75UH 0 6/2/00	TREC		i	1	1	1	1	1 3
	1300 GB/BP CDF	DUPL		1	1	. i	1	. i	1
		010	01260172	01260172	01260172	01260172	01260172	04650168	Ť
			174	HER AUTH	HIGA ALITH	NEW WITH	HEA AUTH		. * .
89373	RULK 1,2,3	COMO	3,60	1 1.06	1 51.0	1 67.4	1.74.1	1 1,40	1 3
	>75UH A 6/5/00	MACC			1000000	I	1	1	1 -
	1430 SB/8F CDF	DUPL		1	1	1	i .	ì	i
		010	01260172	01260172	01590175	01260172	01260172	1 04650168	4
				HGA AUTH	HEA AUTH	HGA AUTH	NGA AUTH		
1374	BULK 1,2,3	0040	3.50	1 1.16	50.3	f 70.0	1 79.5	1 1,48	1 4
	>75UM 8 6/5/00	MREC		1	1.00200	20000	100000	1 2000	- 60 - 7
	1400 GB/BF EDF	CUPL		Hammer	val Process	Legen	i	1	i
		010	01260172	01260172	1 01260172	01260172	01250172	04650168	i
				HTUN AZE	HIGA AUTH	NTUA, ASK	HGA AUTH		
11.001	METHOD SLAME DI	CONC	<0.200	1 <0.020	<0.100	1 0.200	40.100	1 <0.040	1 5
		THIC		1.		1	i	1	- 10 5
		DUPL		1	16 Samuel	1	I Constant	i	i
		010	01260172	01260172	01540172	01250172	01260172	05650168	i
				HIGA AUTH	HGA. MUTH	FIGA, AUTH	HEA AUTH		
M#05	LES ET	CONC	4.30	1 2.40	9.90	1 10.2	5.60	0.0768	1 6
		THEC	86,0	96.4	99.1	102.0	116.8	102.6	1
		DUPL	******	!	1	Ti	1	Ĭ	1.2
		010	01260172	01260172 964 AUTH	01260172   HEA AUTH	1 01260172 HGA AUTH	1 01260172 HGA AUTH	04050168	1
	KD00000000						1001.0021.0		
38	Armenic					Cedinirum			
w .	Chronium Lead					epper		557.0	
	28/97/20				MG H	tercury			
	120								

٠ ALC: NO THE 400 FILE: - 89371 DATE: 22 JUN TRYTHOUGH THE THE THE BRANCH - DATA REPORTING SHEET ( PAGE 2 OF 6 ) JOB DESCRIPTION: GREEN BAY MOBILE THAT PLANT - GLIM-ESTES 208 NUMBER: E05490-92310183 RECEIPT DATE: 05 JUN COMPLETION DATE: 22 JUN .HEM. PRESERVATIVE: TYPE OF SAMPLE: SEDEMENT COLUMN ..... 1 3 5 AMALYTE...... 2 8 MG/KG..... AS ED CR cu 78 HS SAMP # DESCRIPTION 81.405 EXTERNAL DC 01 COMC 76.8 32.2 12.6 67.5 1 1150 1.0.050 MARC DUPL. 01260172 01260172 GID 01260172 01260172 01250172 04650168 HEA AUTH HER MITT FGA AUTH HILL AGE AS Armenic m Codmium D8 Chronium C14 Copper Lead NG. Fiorcury 11/2

DATE: 32 JUN C JOB FILE: 89371 ENVIRONMENTAL CHEMISTRY BRANCE - DATA REPORTING SHEET ( PAGE 4 OF 6 ) RECEIPT DATE: 05 JUN Q JOS DESCRIPTION: CHEEN BAY MOBILE TRMT PLANT - GLEV-ESTES JOB SUMBER: 005490-92310585 TIPE OF SAMPLE: STOCKENT COMPLETION DATE: 22 JUN 01 .HEM. PRESERVATIVE: 11 12 COLUMN ..... 7 30 13 25 11 AMALYTE ..... 9 FE 40 256 GA. 38 MO/KO..... NI KO. DESCRIPTION 1 182 13600 1 274 EXTERNAL OC G1 CONC 13.0 1.49 3.55 TREE DUFL 01260172 01260173 01269173 010 01260172 01260172 01260177 HOA AUTH HIGH AUTH Selenium. HI. Mickel. zinc 204 Silver NG. FE tron Bactum + 15

COLUMN	- 13 - 32 - MN - 418 - 105.0 - 637 - 01260173 + 604 AUT # - 456 	PLANT - D.CK-ESTES  14 33 30 0    0.200   55.2   0.300   01260172   0.400   01260172	THE OF SAMPL	E: 005499-92310183	TAG TRIEDER	t: 05 Jun t: 22 Jun
AVALYTE	. 32 . Mil : 418 : 105.0 : 639 : 01260173 FOA AUTE : 454 : 01260173 HIGA AUTE	33 HO 0.200 55.2 6.303 01260172 1 0.400 1				
#G/Y6	. Mil  105.0  105.0  639  01260173  FOA AUTE  454  01260173  HIGA AUTE	#0   0.250   55.2   0.303   01260172   0.400 				
1,2,3 COMM A 0/2/00 TAREC M/RP COF DUPL GID  1,2,3 COMM B 6/2/00 TAREC M/RP COF DUPL DID  2,3 COMM A 6/5/00 TAREC 8/89 COF DUPL	106.0 106.0 639 01260173 FOA AUTE 456 01260173 HGA AUTE	0.200 55.2 0.300 01260172 0.400				
1,2,3 COMC A 6/2/00 TAREC RA/RP COF DUPL 010 1,2,3 COMC 0/EP COF DUPL 010 2,3 COMC 2,3 COMC A 6/5/00 TAREC 8/89 COF DUPL	106.0 439 01260173 FOA AUTE 454 01260173 HIGA AUTE	55.2 6.303 61260172 3 0.400 1				
A 6/2/00 SARCO SA/RP COF DUPL 010 1,2,3 CONC 0/EP COF DUPL 010 2,3 CONC A 6/5/00 SARCO 8/89 COF DUPL	106.0 439 01260173 FOA AUTE 454 01260173 HIGA AUTE	55.2 6.303 61260172 3 0.400 1				
2,3 CONC 010 1,2,3 CONC 0 6/2/00 TABLE 010 1,2,3 CONC 1,2,3 CONC 1,2,3 CONC 1,2,3 TABLE 1,2,3 TABLE 1,	01260173 FOA AUTE 454 01260173 HIGA AUTE	0.303 01260172 0.400 0 01260172				
2,3 CONC 8 6/2/00 Stac 8/8P COF DUPL DID 2,3 CONC 8 6/5/00 Stac 8/8P COF DUPL	01260173 FOA AUTE 454 01260173 HIGA AUTE	01260172 0.400 1 01260172				
2,3 CONC 0 6/2/00 Stac 0/EP COF DUPL 010 2,3 CONC A 6/5/00 Stac 8/89 COF DUPL	654 454 01260173 HGA AUTH	0.400 1 1 1 01240172				
8 6/2/00 State 8/8P CDF DUPL D10  2,3 COME A 6/5/00 State 8/8P CDF DUPL	01260173 HGA AUTH 758	01260172				
2/8P CDF DUPL D10 ,2,3 COMC A 6/5/DD TREC 3/8P CDF DUPL	01260173 HGA AUTH 758	10000000 0	1			
,2,3 COMC A 6/5/00 TREC 8/89 CDF DUPL	01260173 HGA AUTH 758	10000000 0				
,2,3 COMC A 6/5/DO TABEC B/89 CDF DUPL	758	10000000 0	1			
A 6/5/00 TARC 8/89 CD7 DUPL		0.400	I:			
B/89 CD7 DUPL						
		B. C.	į.			
			I .			
	01260173 HGA AUTH	01268172				
	906	0.400	i			
238K 00/5/6 B		1	i			
S/SP CDF DUPL		1			-	
010	HEA AUTH	1 01260172	10	1		
		<0.100	1			
		1.	į.			
5000000	01240125	1.05340523				
	HEA AUTH	1 01250172				
		4.50				
	99.4	90.0				8.5
	01240173	0.0040479				
-	HEA AUTH	1 diconite				
ese			HO HoLybden	-		
	GID  GIANK G1 CONC SEC CONC SEC CONC SEC COPI COD	01D 01260175 HSA AUTH  01ANK 01 CONC 40_100 2REC 0UPL 01D 01260175 HSA AUTH  CONC 9,90 1260 99,4 0UPL 01D 01269173 HSA AUTH	01D 01260173   01260172   HEA AUTH	01D 01260175   01260172   01260172   01260173   01260173   01260172   01260173   01260172   01260173   01260172   01260173   01260172   01260173   01260172   01260173   01260172   01260173   01260172   01260173   01260172   01260173   01260172   01260172   01260173   01260172   01260172   01260173   01260172   0126017	01D 01260173   01260172   0126017	01D 01260175   01260172   01260172   01260172   01260173   01260173   01260172   01260173   0126017

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JOS FILE: 09371
                                                                                             ORTE: 22 JUN
ENVIRONMENTAL CHEMISTRY GRANCH - DATA REPORTING SPEET ( PAGE & DF & 3
  JOS DESCRIPTION: CREEN BAY MOBILE TRAT PLANT - OLIN-ESTES
                                                       JOS NUMBER: 005490-92310183
                                                                                      RECEIPT DATE: 05 JUN 1
CHEM, PRESERVATIVE:
                                                    TYPE OF SAMPLE: SEDIMENT
                                                                                    COMPLETION DATE: 22 JUN (
            COLUMN....... 13
           AUXLYTE...... 32
                                      33
           NG/KG..... RN
                                      NO.
SAMP # DESCRIPTION
                                                                                                       80
01.403
       EXTERNAL DC 01 CONC 452
                                     0.299
                    WREE
                    DIPL
                    010 01260173
                                     01260172
                         HEA AUTH
       Hangonese
                                                          Hotybdonum
                                                                                                    1.12
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SHEET ( PAGE 1 OF 2 )
PLE: SEDIMENT COMPLETION DATE: 15 JUN
PLE: SEDIMENT COMPLETION DATE: 15 JUN
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and Grease

JOS PILES BRANCE  JOS DESCRIPTION: GREEN RAY MORILE TRAT PLANT - OLIA-ESTES  JOS DESCRIPTION: GREEN RAY MORILE TRAT PLANT - OLIA-ESTES  JOS DESCRIPTION: GREEN RAY MORILE TRAT PLANT - OLIA-ESTES  JOS DESCRIPTION: T Z S TARACTE	JOS DESCRIPTION: GREEN CHEM. PRESERVATIVE:  COLUMN ANALTTE MG/KG  SAMP # GESCRIPTION BLWGS EXTERNAL GC 61	BAY MOBILE TRMT PLA 1 86 10C COMC 21155 SREC	ANT - OLIN-ESTES Z 100 DBG	TYPE OF TRPH	RTING SHEET ( PAGE 2 OF B MLMBER: 005490-92310183	2 ) ***********************************
JOS DESCRIPTION: GREEN BAY MOBILE TRAT PLANT - OLIN-ESTES' JOS MAMBER: GOS-99-92310183 RECEIPT DATE: 05 JA CREM, PRESERVATIVE: TYPE OF SAMPLE: SEDIMENT COMPLETION DATE: 15 JA ANALITE	JOS DESCRIPTION: GREEN CREM. PRESERVATIVE:  COLUMN ANALTTE MC/CG  SAMP # GESCRIPTION BLW03 EXTERNAL GC 61	BAY MOBILE TRMT PLA 1 86 10C COMC 21155 SREC	ANT - OLIN-ESTES Z 100 DBG	3 104 1894	S NUMBER: 005490-92310183	2 ) ***********************************
JOS DESCRIPTION: GREEN BAY MOBILE TRMT PLANT - OLIN-ESTES' JOS MUMBER: GOS490-92310183 RECEIPT DATE: DS JO CREM. PRESERVATIVE: TYPE OF SAMPLE: SEDIMENT COMPLETION DATE: 15 JO COLUMN	JOS DESCRIPTION: GREEN CHEM. PRESERVATIVE:  COLUMN ANALTTE MG/KG  SAMP # GESERIPTION  BL#03 EXTERNAL GC 61	BAY MOBILE TRMT PLA 1 86 10C COMC 21155 SREC	ANT - OLIN-ESTES Z 100 DBG	3 104 1894	S NUMBER: 005490-92310183	RECEIPT DATE: DO
CREM. PRESERVATIVE:  COLUMN	CHEM. PRESERVATIVE:  COLUMN ANALTTE MG/KG  SAMP # GESERIPTION  BL#03 EXTERNAL GC 61	1 56 10C COMC 21155 SREC DUPL	2 100 086	147E 01 3 104 TRPH		
CREM, PRESERVATIVE:  COLUMN	COLUMN ANALTTE MG/KG  SAMP # GESCRIPTION  BL#03 EXTERNAL GC 61	1 56 10C COMC 21155 SREC DUPL	2 100 086	147E 01 3 104 TRPH		
COLUMN	COLUMN AMALTTE MG/KG SAMP # GESCRIPTION BL#03 EXTERNAL GC 61	56 100 coac 21155 seec pure	100 DMG	3 104 TRPH	F SAMPLE: SEDIMENT	COMPLETION DATE: 15
ARALTE B6 100 104 MC/KG 100 DMG TRPH  SAMP # DESCRIPTION  BLW03 EXTERNAL GC 01 CONC 21155   M/A   M/A    SAREC          DUPL              DUPL              DUPL              DUPL              DUPL              DUPL              DUPL	AWALTTE MG/KG SAMP # GESCRIPTION BLW03 EXTERNAL GC 61	56 100 coac 21155 seec pure	100 DMG	104 TRPH	1	
#6/K6 10C D&G TRPH  SAMP # DESCRIPTION  BL#03 EXTERNAL GC 61 COMC 21155   M/A   M/A     M/A	MS/KG SAMP # GESCRIPTION BLWGS EXTERNAL QC 61	COMC 21155 SREC DUPL	DAG	TRPH	1	
SAMP # DESCRIPTION  BL#03 EXTERNAL GE 01 COMC 21155   M/A   M/A     M/A	SAMP # GESTRIPTION BLWGS EXTERNAL QC 61	COMC 21155 SREC DUPL		200000	1	
BL#03 EXTERNAL GC 01 CONC 21155   N/A   N/A   SEC	BLW03 EXTERNAL GC 01	SREC DUPL	I N/A	] H/A	1	
######################################		SREC DUPL	N/A	M/A	1	
TOC Total Organic Carbon 085 011 and Grease		DUPL	1000	į.	i	
010 10040160   55990165   55990167   TDC Total Organic Carbon 065 011 and Grease			The second secon	The second		
TDC Total Organic Carbon 065 Of Land Grease		MED INCOME INC.	r sceenses	1 55990167		
2000 A 20			1 23710.02	Landin	(8)	
2000 A 20	Total Oceanic Co	artico a		ots	Of Land Grease	
			rbons	Out of	311.000.31.1000	
	1414					

Jobfile Number: 89375 Project: GREEN BAY MOBILE TRMT PLANT - OLIN-ESTES Account Number: 00549D-92310183 Date Received: 05 JUN 00

Job#	Sample	Tst	Analyte	* REC	% SDUPL	RPD	OID
89375	89378	100	DAG	85.1	78.8	7.7	55990165
	89378		Control of the Contro	90.9	89.0	2.1	55990167

Page 1

END OF REPORT

DATE: 16 JUN 0 400 FILE: 89379 ENVIRONMENTAL CHEMISTRY BRANCH - DATA REPORTING SHEET ( PAGE 1 CF 2 ) "I'M DESCRIPTION: OREEN BAY MOBILE TANT PLANT - OLIN-ESTES" RECEIPT DATE: 05 JUN 0 JOB WUMBER: 005490-92310183 COMPLETION DATE: 16 JUN 0 TIPE OF SAMPLE: SEDIMENT DIEM. PRESERVATIVE: 3 5 139 140 141 142 ANALYTE..... 137 138 PCB-1254 PCB-1221 FC8-1232 PCB-1242 PCB-1248 US/XS..... PC8-1016 SAMP # DESCRIPTION RC: +25.2 1095 <25.2 <25.2 425.2 BULK 1,2,3 CONC <25.2 89379 <75IM A 6/2/00 TREE 1300 GB/SP COF DUPL 54830166 54830166 54830166 54830166 54830166 OID 54830166 <23.7 845 1 425.7 425.4 BULK 1,2,3 COMC <23.7 <23.7 <75UH R 6/2/00 MEC 1300 SR/BP CDF DUPL 54830166 54830166 54830166 54830166 54830166 54830166 CID 1 <29.5 1662 29.5 <29.5 <29.5 COMC 429.5 89381 BULK 1,2,3 >75UN A 6/5/00 1000C 1400 GB/BP CDF DUPL 54830166 54830166 54830166 54830166 34830166 010 54830166 429.9 1 429.9 1823 55576 BULK 1,2,3 CONT <29.9 1 429.9 >75UM & 6/5/00 TREC 1600 GB/BP COF DUPL 54530166 54830165 54830166 54830166 DIG 54830166 54830166 45.33 +8.33 METHOD BLANK DT DONG <8.33 <8.33 48.33 <8.33 81 601 MAFC DUPL. 54830166 54830166 54830166 54830166 54830166 54830166 CID W/A N/A N/A N/A COMC 0.82 N/A 8L#02 LCS 01 TOREC 98.4 DUPL 34830166 54830166 54830166 54830166 CID 54830166 54830166 PC8-1016 PC8-1016 PC8-1221 PCG-1221 PCB-1242 PCB-1242 PCB-1232 PCB-1232 PGB-1254 PGB-1254 PCB-1248 PCB-1248

	*								
JOB FILE	: 89379			*				DATE:	16 30
			NVIRONMENTAL	CHEMISTRY BRANCH -	DATA REPORT	ING SHEE	C PAGE 2 DF	2 )	*****
									٠.
		N BAY	MOSILE TRAT F	LANT - OLIN-ESTES			005498-92310185	RECEIPT DATE:	
CHEM. PR	ESERVATIVE:				TYPE OF	SAMPLE:	SEDIMENT	COMPLETION DATE:	16 30
	COLUMN		7	a	9				*
	AMALYTE			145	146 0CLBP				
	00/04		PCB-1260	TELXYL-S	DULBE				
SAMP #	DESCRIPTION								
89379	BULK 1,2,3	CONC	42.8	82.3X	79.2%	1			
	<75UM A 6/2/00			1		10			
	1300 SB/SP COF	DUPL DID	54830161	54830166	54830166				
			21000701	Company (	1000000	2.0			
89380	BULK 1,2,3	CONC	37.1	89.13	82.1%	1			
31205	<75UH B 6/2/00			i	1	i			
	1300 68/6P COF	CUPL	********			- 10			
		010	54833161	54830166	54830166	1			
89381	BULK 1,2,3	cour	74.3	81.7%	75.81	100			
09301	+75UH A 6/5/00		1415	1	13.00	i			
	1400 GB/8P COF			1	İ	1			
		010	54830161	54830166	54830166	1			
89382	BULK 1,2,3	CONC	81.5	86.2%	74.12	10			
	>75UH B 6/5/00	MEC	200		25.00	i			
	1400 68/8P CDF	DUPL	54830161	54830166	54830166	- 1			
		010	Januaria I	39830100	1 24030100				
91,001	METHOD BLANK DT	CONC	<8.31	87.1%	81.1%	13			
		TREC			İ	1			
		DUPL	54830161	54830166	54830166	- 1			
		77.7	(10000000)	Market and the second					
81,#02	LC8 01	CONC	0.87	77,4%	78.6%	15			
		MREC	104.4	1		1			
		DUPL	54830161	34830166	54830166				
		010	34030101	1 3444					
PCB-1266	POS-1260				TolXNL-S 2	,4,5,6-1	etrachloro-m-xyle	necSurrogate(60-150 WS	
DOUBP	DecachLorobipho	myl (St	rrogate (60-)	50 WS1)					
								14	

Job Description	n: Green Bay Mobile T	rtmt Plant - Olin-Estes	, Jo	b File Number:	8937
	ECB Qualit	y Assurance Co	rrective Actio	n Form	
Analysis:	PCB			15-June-00	e e
Analyst:	A. Morrow		_ Instrument:	5890 #83 GC	_
Problem:	There is PCB's prese	ent, not sure if it is 124	2 or 1248	3 9	
Sample Num	ber(s) Affected:	89379-89382			
Recommend	ed Corrective Action:	Report as 1242 and	do further study.		
Corrective Ac	tion Taken By Analyst	Same as above.			
12 02 1					
Comments:		clean-up and analyses sample contaminants.	done to better quan	state and	
Date Correcti Reviewed by:	ve Action Taken:	15-Jund 00	ifau		-41

	.E1 . 80323		ENVIRONMENTA	L CHEMISTRY BRANC	H - DATA REPOR	TING SHEET ( PAS	E 1 0F 6 5 *	DATE	
)	Dr. Pla	- 3							
	DESCRIPTION: GR RESERVATIVE:	EEN BAY	HOSILE TRAT	PLANT - OLIN-EST		NUMBER: 005490- SAMPLE: SEDIMEN		RECEIPT DATE: COMPLETION DATE:	0:
	COLUMN,,,		1	2	3	4		6	
	ANALYTE.			294	296	297	303	304	
	UG/KG		MAPETH	ACEMAY	ACCHAP	PLUORE	PHENAN	ANTRAC	
SAMP #	DESCRIPTION								
89383	BULK 1,2,3	COMC	72.9	1 <20	1:10:4	26.0	F 166	Lara	
	<75UM A 6/2/00			1	1	1	100	27.0	
	1300 GB/BP COF	DUPL	DOMESTICAL CO.		1	T.	i	Î.	
		010	DB890168	08890163	00090160	98699166	08890160	08990160	
89384	BULK 1,2,3	CONC	99.0	1 <19	1 12 4	1 29.5	1 186	1.21	
	<75UH B 6/2/00	MEC			1	1	100	31.6	
	1300 GB/BF CDF	CLD	03890160		1	1	i	i	
		010	oceso (po	08890160	08890160	08890160	08890160	08890160	
89385	BULK 1,2,3	CONE	352	1 43.2	60.7	118	886	1 202	
	>75UM A 6/5/00 1400 GB/SP CDF	SUPL		13	1	1000		i	
	HOS CAPAR CAR	CID	08890160	06890160	G8890160	03890160	CHRODIAN		
				I reserve	1 323,0100	1 osewarec	08890160	08890160	
89386	BULK 1,2,3	0040	382	1 39.2	63.0	1 128	868	1 185	
	1400 (8/8P CDF	DUPL		1	Ä	- 1	T .	1	
	1440 100 21 021	7000077	08090160	08890160	05890160	1 48890160			
					1 43573 110	1 40070 100	1 08890560	06890160	
3L#01	METHOD BLANK OT	CONC	<10	1 410	1 <10	1 <10	1 410	1 <10	
		TREC		1	1	1	i	1	
		DUPL.	08890160	08890160	PROTOCOLO	1	F.	1	
			45070100	1 consolida	08890160	[ C0099160	08890160	08890160	
BL#02	LCS 01	CDMC		64.0	76.0	1 80.5	40.5	1.85.5	
		MARC	64.5	64.0	76.0	00.5	88.5	85.5	
		DUPL	08890160	05890160	08890160	08890160	Lossenses		
					Location	00070100	05090160	08890160	
MAPRITA	Maphthalene				ACTHAY AG	enophthy!ene			
ACERAP PHENAN	Acenaphthene Phenanthrene				FLURRE FL	uphene			
- acres					ARTRAC AN	Thracene			
à									

908 LIFE: 48383 DATE: 14 JE ENVIRONMENTAL CHEMISTRY BRANCH - DATA REPORTING SHEET ( PAGE 2 OF 4 ) JOB DESCRIPTION: GREEN BAY MOBILE TRMT PLANT - OLIN-ESTES JOS MUHBER: 005490-92510185 RECEIPT DATE: 05 JL CHEM. PRESERVATIVE: TYPE OF SAMPLE: SEDIMENT COMPLETION DATE: 19 JL COLUMN...... 7 8 9 10 11 12 ANALYTE..... 306 507 309 350 313 314 UG/KG.... FLANTHE PYREME CHRYSE BAANTHE BRELAMI REFLANT SAMP # DESCRIPTION 09383 E,5,1 xus COMC 248 222 1 141 90.9 105 68.9 <75UR A 6/2/00 DERK 1300 (8/8P CD) DUPL 010 08890163 08890160 08890160 08890163 08890160 08890168 89384 AULK 1,2,3 CONC 273 1 258 163 105 120 85.8 475KM 8 6/2/00 THEC 1500 GB/8P EDF DUPL 08890160 ore 08870160 08890160 08890160 08890160 08890160 89385 BULK 1,2,3 DOMC 1200 1420 675 1 812 584 475 >75UH A 6/5/00 MARC 1400 08/8P CDF DUPL 010 08890160 06890160 08890160 08890160 95590160 08890150 89386 BULK 1,2,3 CDMC 1060 1300 825 700 544 454 >75UN & 6/5/00 tasc 1400 GR/BP COF DUPL. oto 08890160 08890160 08890160 08890160 08890160 08890160 81,601 METHED BLANK OF TOWE 415 1 410 1 <10 <10 1 410 <10 THEC BUPL CCD. 08890160 08890160 08890160 08090160 08890160 06890160 BLAGS LCS 01 CONC 91.5 87.0 1 97.5 1 fts. b 76.5 88.0 txec 91.5 87.0 97.5 85.0 78.5 88.0 DUP 01D 08890160 08890160 08890160 08890160 05690160 08890160 FLANTHE Fluoranthese PTRENE CHRYSE Chrysene BARKTIR BenzoCatAnthracene BEFLANT Bendo(b)Fluoranthene EXFLANT SenzoCk) Fluoronthene

CHEM. P	GESCRIPTION: GRE RESERVATIVE:	EX BAY	HOSTLE FRAT	PLANT - OLIN-ESTES		MUMBER: 005490 SAMPLE: SEDIME		RECEIPT DATE: COMPLETION DATE:	05 J
	DOLUMY		13	14	15	16	17	14	
	AMALYTE.		315	316	317	318	322	327	
	HG/KG	*****	BAPYRE	1125PYR	DEAHANT	B-G#1-PY	PHANONS	2518P-5	
SAMP #	bescription								
89383	BULK 1,2,3	CONC	99.9	90.9	1 19 4	1 103	86.9	65.2%	
	475UM A 6/2/00	XXXC		i	1		00.7	1 05.24	- 2
	1303 SB/BP CDF	DUPL		i	i	i			
		010	08890160	08990160	10090160	08890160	08390160	08590160	Ì
07384	BULK 1,2,3	COAC	117	1 108	20.0	1 122	1 211	122	
	<75UN 8 6/2/00	TOREC		1		1		75.9%	- !
	1300 GB/BP COF	DUPL		Încere c		÷		1	- 1
		010	05890160	08890160	08890160	G5890160	08890160	08890160	į
17385	BULK 1,2,5	COMC	813	1 553	1 114	1 611	1 411	1 75.95	
	>75UM A 6/5/00	TREC		į.	1	1	7.0	1	- 1
	1400 GB/BP COF	DOPL.		4	F	i	No.	1	- 1
		010	08890160	06090160	08890140	06890160	06890160	18890163	i
19386	BULK 1,2,3	CONC	755	1 527	114	617	1 441	1 74.3x	
	>75UM II 6/5/00	1960		1 8	303	1	1 641	14.34	. !
	1400 CB/8P CDF	DUPL		1	i	i	1 0	1	- 1
		010	08890160	06890163	08890160	08890160	00090160	08890160	i
1,001	METHOD BLANK DI	COAC	<10	1 <10	<10	<10	1 +10	1 82.6%	
		TREC		Parties 5	0.5380	1	1 4.0	66.04	- 1
		PUPL		1 3		is:	1	i	- i
		010	08890160	08890160	08890160	08890160	03890160	65890160	į
L#02	LC8 01	CONC	74.5	87.0	85.5	1 91.0	65.5	173.75	
			74.5	87.0	85.5	91.0	1 45.5	73.7	1
		DUPL		10000				1	
		010	08890160	G8890160	08890160	08890160	06873163	08890160	1
APYRE	Benzo(a)Pyrene				L123PYR Inc	tones a sur sur			
THANAS	Dibergo(A, #JAnt	hracone	35			leno(1,2,3-c,p)/ leo(G,H,E)Paryle			
NAME OF	2-Mothylmophtha				- Company - Comp	Luorobiphenyl (1		2000	

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+ 438 FILE: 89383
                                                                                                    DATE: 14 JU
  ENVIRONMENTAL CHEMISTRY BRANCH - DATA REPORTING SHEET ( PAGE 4 OF 4 )
    JOB DESCRIPTION: GREEN BAY MOBILE TRAT PLANT - OLIN-ESTES
                                                                                             RECEIPT DATE: 05 JUA
                                                             JDB NUMBER: 005490-92310183
  CHEM. PRESERVATIVE:
                                                                                           COMPLETION DATE: 19 JUN
                                                          TYPE OF SAMPLES SEDIMENT
              COLUMN...... 19
              AMALYTE..... 328
              00/05..... PTERP-S
  SAMP # DESCRIPTION
  89383
        8ULK 1,2,3
                       DONE 79.6%
         <75UM A 6/2/00 10REC
         1300 SB/BP COF BUPL
                       010 088990160
        BULK 1,2,3
                       COMC 78.6%
         <75LH 8 6/2/00 TREC
         1300 GB/UP CDF
                       DUPL
                       010 08890160
 19385
        BULK 1,2,3
                       CONC 86.0%
         >75UH A 6/5/00
                      MREC
         1400 EB/BP CDF DUPL
                       010 06890160
 89386
        BULK 1,2,3
                       COMC 86.9%
         >75UH 8 6/5/00
                       TREC
         1400 GB/8P CDF
                       DUPL.
                       010 08890160
 BL#D1
        METHOD BLANK DI CONC 76.6%
                       TORREC
                       DUPL
                       010 06890160
8L#02 LCS 01
                       00MC 70.8%
                       TREC 70.8
                       DUPL.
                       01D 08890160
PIERP-S p-Terphonyl-D14(Surrogate (18-137 S))
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108 FT E: 895L5 DATE: 03 AUG E ENVIRONMENTAL CHEMISTRY BRANCH - DATA REPORTING SMEET ( PAGE 1 OF 3 ) JOB DESCRIPTION: GREEN BAY MODILE TRIMT PLT - DLIN-ESTES JOB HUMBER: 0054PD-92310183 RECEIPT DATE: 26 JUN O CHEM. PRESERVATIVE: TYPE OF SAMPLE: SEDIMENT COMPLETION DATE: 3 AUG O COLUMN ..... 1 2 3 AMALTTE..... 2 6 5 6 7 8 MG/KG..... AS CD CR CU PR. NO. SAMP # DESCRIPTION A13. 89585 CAS BULKA CONC 2.10 0.639 28.9 27.3 1 42.9 1.08 8/21/00 1100 MEC 94.6 92.4 87.8 80.8 98.0 112.3 GE NW DAP CELLS DUPL 2.20 0.609 28.4 27.4 42.4 1.07 010 61260215 01250215 01260215 91260215 01230299 0465018V HGK AUTH HEA AUTH HEA WUTH HEA AUTH CON BULKS COMC 2,30 0.600 30.7 38.3 1 44.5 1,09 6/21/00 1100 2 MIC BC NW DMP CELLS DUPL 010 01260215 01260215 01260215 01260215 01230209 04850189 HGA AUTE **HEA AUTH** HIA AUTH HEA AUTH BLADT METHOD BLANK D1 COMC 40.200 <0.020 <0.100 0.600 <1.00 40,040 1 Direct DUPL 010 01260215 01250215 01250215 01260215 01230209 04650189 NGA AUTH HTUN ARM HGA AUTH HGA ALITH BLACS LES DI DOMC 9,49 4.84 1 19.0 17.4 21.0 0.077 XRIC 93.7 96.8 \$ 95.0-87.0 105.0 102.1 DUPL 010 01260215 01260215 01260215 01260215 01230009 04650189 HIGH AUTH HEA AUTH HIA AUTH HGA: AUTH BLA03 EXTERNAL OF DI COAC 88.3 37,1 22.5 56.9 1 1140 0.058 5 MEC DIPL 010 01260215 01260215 01260215 01260215 01230209 04650189 HIGH ALITH HEA AUTH HIGH AUTH AGA AUCH AS Arsenie CD Codnium CH Chronium CU Copper P9 Lead BC. Mercury

DATE: 05 AUG 200 FTLE: 89565 JOB MUMBER: 0054PO-92310183 RECEIPT BATE: 26 JUN 1 JOB DESCRIPTION: GREEN BAY MUSILE TRIMT PLT - OLIN-ESTEE TYPE OF SAMPLE: SEDIMENT COMPLETION DATE: 3 AUG / CHEM. PRESERVATIVE: 11 15 COLUMN ..... 7 a 11 13 25 30 ANALYTE..... 9 10 SE AG 216 BA FE MG/KG..... N1 SAMP # DESCRIPTION 25 74.0 1 40.5 7550 0.299 CAB BULKA EDSE 10.3 8,499 1 17.6 90.8 95.6 160.0 6/21/00 1100 TORRE 96.4 106.6 74.5 40.5 7540 0.199 0,499 CHE MM DMP CCLLG DUPL 10.1 01230209 01250209 01230209 010 01230209 01260215 01260215 WEAL AUTH HGA AUTH 89586 C48 BULKS COMC 11.3 0,500 0.700 78.2 45.2 94.4 6/21/00 1100 TREC BE NU DWF CELLA DUPL 010 01230209 01280215 01230209 61230209 01230209 01260215 RIGA AUTH HEA AUTH +0.100 <2.00 <0.100 <1.00 81,401 METHOD BLANK OT COME. 1.20 49,200 TREC DUPL 01260215 01230209 01230209 01230209 01230209 01260215 010 SEA AUTE MGA ALITE 49.9 1 51.0 1 110 4.50 CONC 21,6 4.10 81,602 LCS 01 MEC 108.0 82.8 90.8 - | 99.8 102.0 110.0 DUPL 01230209 01230209 01230209 01260215 01260215 010 01230209 HILA NUTH SEA AUTH 4.49 1 282 195 1 24900 5 81,003 EXTERNAL DC D1 COMC 16.6 1.69 MEC DUPL 01230209 OID 01230209 01260215 01260215 01230209 01230209 HIGA AUTH HEA AUTH \$6 Setenium Mickel 611 216 Zinc AG. Silver Sarius FE Iron BA

	t; 8958°										DATES	03 AL
		(	NVIROMMENTAL	CHEMISTRY BRANCH	- DAT	A REPO	ITTHS SHE	ET ( PAG	g 3 or	3 )	••••••	******
				01 - 01 W-02100			wants-	005470-	47110191		REDEIPT DATE:	20. 31
	DESCRIPTION: GREE RESERVATIVE:		POULTE IN IN	PLI - GLIR CAILS				SEDIMEN			COMPLETION DATE:	3 A
	COLUMN			14								
	MG/KG			33 MD								
SIMP F	DESCRIPTION											
89585	C48 BULKA	CONC	134	1 0.299	i.							
	6/21/00 1103		101.6	105.4	1							
	GB NY DMP CELLA		01230209	0.299	P							
		0,0	NGA AUTH	- Carre								
89586	CSO BILLED	COSC	146	1 0.400	1							
	6/21/00 1100 8G NH DMP CELL4	TOREC DUPL			1							
			01230209 HGA WUTH	01260215	i							
31,901	HETHOS BLANK OF		<8,100	1 <0.100	ı							
		THEC			!	4						
		ulb	G1230209	01250215	i							
			MEA AUTH									
31,902	LC9 01		19.6	5.00	1							
		BUPL	98.0	100.0	1							
		018	01230209 HGA AUTH	0.1560512	İ							
BL#03	EXTERNAL GC 61			0.997	1							
		DUPL			1							
			01250209	01260215	i							
			HEA AUTH									
HS	Henganese				HO		Molytein	num				

JOB F11.21 89.87 " 4 DATE: 13 JUL. ENVIRONMENTAL CHEMISTER SHAPES - DATA REPORTING SHEET ( PAGE 1 OF 2 ) ON DESCRIPTION: GREEN BAY MODILE THINT PLT - OLIN-ESTES RECEIPT DATE: 26 JUN 1 JOS MIMBER: 0054PD-92310183 CHESA PRESERVATIVE: TYPE OF SAMPLE: SEDIMENT COMPLETION DATE: 13 JUL 1 COLUMN ..... 1 ANALYTE..... 137 136 130 140 141 142 UG/KG..... FC8-1016 PCR-1221 PC8-1232 PEB-1242 PCB-1248 PCB-1254 SAMP # DESCRIPTION 89587 C48 BULKT COMC <12.7 1412.7 1 +12.7 1 <12.7 5787 <12.7 5/21/00 1100 SOREC BG MM DMP CELLS DUPL 010 54830182 54830182 54830182 54830182 54830182 54830182 89588 C48 BULKS CONE <12.7 1 <12.7 <12.7 <12.7 3722 1 <12.7 6/21/00 1100 2350 GB NW DMP CELLA BUPL 000 54830182 54830182 54830182 54830182 54830182 54830182 BLECT METHOD BLANK DT CONC +8.3 48.3 48.3 48.3 1 -8.3 v8.3 XREC DUPL 010 54830182 54830182 54830182 54810182 54830182 54830182 BLMCZ LCS 01 EDMC 0.97 N/A I N/A N/A 1 H/A N/A MREC 116.0 DUPL 010 54830182 54830182 54630162 54830182 54830182 54830182 PCB-1016 PCB-1016 PCB-1221 PCB-1221 PCB-1232 PCB-1232 PCB-1242 PCB-1242 PC8-1248 PCB-1248 PCB-1254 PCB-1254 + 15

406 FILE: 85387 + DATE: 13 JUL JOB DESCRIPTION: SREEN BAY HOBILE TREAT PLT - CLIN-ESTES RECEIRT DATE: 26 JUN JCB NUMBER: 0054Pb-92310183 CHEM. PRESERVATIVE: TYPE OF SAMPLE: SECTIMENT COMPLETION DATE: 13 JUL COLUMN...... 7 9 ANALYTE..... 143 145 146 UG/KG..... PC8-1260 TOLKYL-S DOLBR SAMP # DESCRIPTION 89587 CES BULK! COMC 41.9 \$2.33 6/21/00 1100 TREE BE NO CAP CELLA DUPL 010 54830182 54830162 56830182 89588 CAR BULKE 91.2% 84.1% 6/21/00 1100 Sage DE NO DIP CELLS DUPL 010 548301A2 54830182 54830182 BLADS METHOD BLANK OS CONC 46.3 89.5% 90.9% Met DUPL. 010 54830182 54830182 54830182 BL#02 LCS 01 COMC 1.03 96.7% 95.6% MREC 124.0 DUPL 010 54830182 54830182 54830182 PC8-1260 PCS-1260 1ciXfL-5 2,4,5,6-Tetrachioro-m-xylene(Surrogate(60-150 us SCLSP Decashlorubiphenyi(Surrogate (60-150 VS))

	E1 - 89589		DEVIDOLMENTA:	cor	Wirthy spaces	0474 750	ontre:	SAFET 4 DA			VIE:
		onserve)	POR INCOMESTINA		MISSIKY BEMALK			ARET I PA	E 1 0F 1	,	****
JOS CREM. P	DESCRIPTION: SRE RESCRIPTION:	EH SAY	HOBILE TATHI	PLT	- GLIN-ESTES			DER: 0054PD- PLC: SEDIMEN		RECEIPT DA	
	DOLLAN,				2	3		4			
	AMALYTE				95	100		104			
	MG/KG	ere e e	100		IVS	080		TRPM			
EARP #	DESCRIPTION										
89589	CAB BULE A		26100	1	44	230		1 190	1		
	6/21/00 1100 OB NV DRP CELLS	SMEC.	25700	- 1		1		1	1		
		000	60040187	ı	10150154	5599018	9	55990191	1)		
69590	DAR BURCK B	100000	28500	1	44	210		180	1		
	6/21/00 1100 68 MV DMP CELL4	DUFL		!		86.9		88.2			
		pte	60040387	i	10150154	5599018	P	55990191			
	METADO DE LOS DA										
11,001	METHOD BLANK (11	TRUE	<100	1	44	<35		6.3			
		DUPL		- 1		1		i.			
		010	60040187	1	10150154	5599018	1	55993191	i		
509,00	LCS 61	COMC	8640	1	K/A	1 932		1 948	1		
		MREC	94.6	ı		91.7		93.3	i		
		DOPL.	60040157	1	*********				1		
		419	00040301	3.	10150154	55990185		55990191	37		
1,605	EXTERNAL GC 01	COAC	20700	1	N/A	H/A		I N/A	Si.		
		DUPL		1		2000			11		
			60040187	- 1	10150154	55990189		55990191			
								i soussiti.	901		
oc	Total Organic D	arbon				TVS		Volatile Sol			
86	011 and Grease					TRPH	Total	Recoverable	Petroleum R	dracarbons	
					1.2						

Jobfile Number: 89589
Project: GREEN BAY MOBILE TRIMT PLT - OLIN-ESTES
Account Number: 0054PD-92310183
Date Received: 26 JUN 00

Job#	Sample	Tat	Analyte	* REC	∜ SDUPL	RPD	OID
89589 89589	BL#02	104	OAG TRPH OAG TRPH	88.9 88.2 91.7 93.3	87.7 86.9 91.2 93.0	1.4 1.5 0.5	55990189 55990191 55990189

Page 1 END OF REPORT

+ 1



KE,	
Minks	
West one	89591

	MESCRIPTION: DREE DESERVATIVE:	M BAY	MODILE TRINT PL	I - OLIN-ESTES	0300.000	HUMBER: 0054PD- SAMPLE: SEDIMEN	92310183 IT	RECEIPT DATE: COMPLETION DATE:	26 JU
	COLUMN		1	2	1	4	5	6	
	ANALYTE		290	294 ACEMAT	296 ACENAP	297 FLUORE	303 PAEHAN	304 ANTRAC	
2002000			marnie.	acom,	ALLENT	TEMPLE	T TOTAL	ANI SAL	
SAMP #	DESCRIPTION .								
89591	C49 BUL€ A 6/21/09 1100	COMC	121	11.1	34,2	49.8	1 219	43.8	1
	GR WH DAP CELLA	DUPL	05590181	08890181	18690181	08890181	08890181	08890181	1
89592	CER BULK B	CONC	126	17.3	1 48.3	57.0	238	49.3	- 1
	6/21/00 1100 GE AN DIP CELLA	NATE:	40.0	58.5	62,5	77.5	-	87.5	
		GID	95590151	08690161	1 08090161	05890181	18109883	06070181	- 1
SLA'01	METHOD BLANK OT		43.3	3.3	43.3	43,3	43.3	<3.3	- 1
		DUPL			1		1		1
		GID	05890181	08890181	18109880	08890161	08890181	08890161	1
11.MO2	LCS 01	CONC	49.0	45.7	1 49.0	52.0	55.7	54.7	1
		SUPE.	60.0	65.5	73.5	78.0	80.5	82.0	- 1
		GID	05690181	08670181	08890181	05890181	CHERCIAI	08890181	ा
NAPHT#	Naphthalene		-		ACENAY	Acetaphthylene			
ADEMAP -	Acensphthene				FLUCRE	Fluorene			

DIVIRONMENTAL CHEMISTRY BRANCH - DATA REPORTING SMEET ( PAGE 1 DJ 4 )

+ 15

100 F10	E: 89591							MATES	**
			CHATROMAENTAL	CHEMISTRY BRANCH	- DATA REPORTS	NG SHEET ( PAGE	3 07 4 1		•••••
400	prominera.								
CHEM, F	DESCRIPTION: GRE PRESCRIVATIVE:			PLT - OLIM-ESTES		UMBER: 0054P0-9 AMPLE: SEDIMENT		RECEIPT BATE: COMPLETION DATE:	26 J
	COLUMN			16	15	16	17	18.	
	UG/XG			316 (123Pre	317 DEAUANT	318 8-GH3-PT	322 ZMONAPH	327 2F18F-5	
SAMP #	DESCRIPTION								
89591	048 BULK A 6/21/00 1100	COMC	102	75.0	12.6	1 87.1	1 145	1 65.4%	Ţ
	SB NH DHP CELLA			1	1	1		1	ij
		oth	08890181	08890181	08890181	08890181	08390181	08890181	1
09592	C4B BULK B	CINC		89.0	1 18.3	1 104	1 146	1 67.0%	1
	6/21/00 1100 GR MV DMP CELL4		0.56	79.5	87.5	76.0	1.68.0	65.1	1
	OR HE DIS CELLS	DID	G8690161	06890181	08890181	03890181	08890181	08890181	-
81,891	METHOD BLANK 01	CONC	43.3	1 (3,3	1 43	1 <3.3	1-0.3	1 78.1%	
		MEE		į i	1 .	i	1	70.14	1
		DID	06890181	05890181	06890181	68890181	   05890181	05690181	1
SLW02				At an a training					
DEADS	LCS 01		51.3 77.0	54.3   81.5	86.5	65.7	42.7	70.ex	1
		DUPL		,		70.5	64.0		
		010	08890181	08890181	00090181	D8890181	06890161	68890161	i
BAPTRE	Benzo(a)Pyrene				1123PYR 1nd	eno(1,2,3-C,0)Py	nene		
DEARANT 2mouspu	Dibenzo(A,H)Ant 2:Methylosphtha				B-SMI-PY Bert	zo(G, M, I)Perylen			
armine a	2. maxing conquisite	tenc			ZFLEP-8 Z-9	Luorabi phenyl (Su	regate (30-11	5 5))	

```
DATE: 10 JUL
. 100 FILE. 89593
  ENVIRONMENTAL CHEMISTRY BRANCE - DATA REPORTING SHEET ( PAGE 4 OF 4 )
                                                         JOD NUMBER: 0054PD-92310183
                                                                                        RECEIPT DATE: 26 JUN
    JOB GESCRIPTION: GREEN BAY MODELS TRIME PLT - DATA-ESTES
                                                                                      COMPLETION DATE: 10 JUL :
                                                       TYPE OF SAMPLE: SEDIMENT
  CHEM. PRESERVATIVE:
              COLUMN ...... 19
              AMALYTE...... 328
              US/KS..... PTERP-S
                                                                                                           22
  SAMP # DESCRIPTION
                    00%C 73.9%
  89591 CAR BULK A
          6/21/00 1100
          GR MY DMP CELL4 DUPL
                       OHU 08890181
                       CONC 77.0%
  89592 CAR BULK B
          6/21/00 1100 XREC 79.5
          IN SHIDMP CELLS DUPL
                        010 058901$1
          METHOD BLANK DT CONC BO.2%
  BLWOT
                        1850
                        DUPL
                        010 08899181
  8L#02 LCS 01
                        COSC 70.5X
                        TREC
                        DOPt.
                        GED DESPONST
  PTERP-S p-Terphonyl-D14(Surrogate (18-137 83)
                                                                                                           1.75
```

Jobfile Number: 89591
Project: GREEN BAY MOBILE TRIMT PLT - OLIN-RSTES
Account Number: 0054PD-92310183
Date Received: 26 JUN 00

Job#	Sample	Tet	Analyte	% REC	₹ SDUPL	RPD	OID
89591	89592	290	NAPHTH	40.0	51.5	25.1	08890181
89591	89592	294	ACENAY	58.5	58.5	0.0	00890181
89591	89592	296	ACENAP	62.5	60.5	3.3	08890181
89591	89592	297	FLUORE	77.5	75.5	2.6	08890181
89591	89592	304	ANTRAC	87.5	84.0	4.1	08890181
89591	89592	309	CHRYSE	73.5	77.0	4.7	08890181
89591	89592	310	BAANTHR	85.0	94.5	10.6	08890181
89591	89592	313	BBFLANT	81.5	75.5	7.6	08890181
89591	89592	314	BKFLANT	55.5	60.0	7.B	08890181
89591	89592	315	BAPYRE	62.0	67.0	7.8	08890181
89591	89592	316	I123PYR	79.5	79.5	0.0	08890181
89591	89592	317	DBAHANT	87.5	8750.0	196.0	D8890181
89591	89592	318	B-GHI-PY	76.0	75.0	1.3	D8890181
89591	89592	322	2MeNAPH	68.0	65.5	3.7	08890181
89591	89592	327	2F1BP-S	65.1	65.0	0.2	08890181
89591	89592	328	PTERP-S	79.5	81.1	2.0	08890181

Page 1 END OF REPORT

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				4						
	MESCREPTION: GREE MESCRWATEVE:	EN BAY	HOBILE TRNT (	PLANT - DLIN-ESTES		NUMBER:		310183	RECEIPT GATE:	03 JUL 3 AUG
	DOLLMN		11	2	3	4		5	120	
	ANALYTE				5	6		7	6	
	MG/RG			CD	DR .	çı	u .	78	e HG	
SAMP #	DESCRIPTION									
9723	Ave 4 3 3 - 2 5	0040	4 00	7202	22.5	750				
27123	BULE 1,2,3 >2,0	COAC	1.80	0.669	41.3			40.9	0.625	1
		MREC	95.4	91.4	81.2		1.8	99.2	1 105.2	1
		DUPL	1.80	0,699	43.5	29	7.0	1 41.9	0.631	- 1
		010	01360215	01260215	01280215	01	260215	01230209	04650199	1
				HGA: AUTH	HGA AUTH	RC.	A AUTH	MGA AUTH	4.0000000	,
9724	BULK 1,2,3 <2.0	0000	2.99	1 1.94	85.2	1.97	.2	1 51.0	2,20	
		THEC		1	0.00	1				
		DUPL.		Î ·	1	-		i	i i	- 1
		GED	01280215	01260215	01260215	1 01	260215	01230209	06650199	1
				PCA AUTH	HGA AUTH	A	A ALITH	HOA AUTH	1 34000177	
L#91	METHOD BLANK OT	CONC	40,200	(0.020	<0.100	10.	600	1 <1.00	1 40.000	1
		1150		1	-	1		1	1	- 1
		DUPL		Vicence of		100		i		1
		010	01260215	01260215	01260215	01	260215	01230209	04650199	
				HGA AUTH	HSA, AUTH	*0	HTUA A	REA AUTH	1	
105	LCS 01	CONC	9.40	1 4.80	19.0	1.17	.4	1 21.0	1 0.0752	1
		THEC	93.7	96.8	95.0	- 1 47	.0	1 105.0	100.3	- 1
		DUPI.		12				4 5	1	
		010	01260215	01260215	01260215	1 01	260215	01230209	04650199	
				SEA AUTH	HCA AUTH	HG	A WUTH	HGA AUTH	1 4100101	
#03	EXTERNAL QC 01	CONC	50.1	1 37.1	22.5	1 86		1 1140	1 0.053	
		TRIST		present a	10000	100	7877	1	4.455	- 1
		DUPL		10 0		10		1	1	
		010	01250215	01260215	01250215	0.00	260215	01230009	04450199	1
			*38000000	HGA ALITS	BEA AUTH		A AUTH	WEA AUTH	I regarde	
E	Armenic				CD (	Cedalun				0.5
55					LD (	-Arabitan				
6	Chromtun				EU (	Copper				

JOB FIL	E: , 89723											BATE:	03 A	17
*******	•••••	•••••	ENVERONMENTA	L DH	MISTRY BRANC	at -	DATA REPO	ORTING :	THEFT ( PASE	2 OF 3 )	•••••		*****	
-									•					
DIEM. P	DESCRIPTION: GRES RESERVATIVE:	EN SAY	MOBILE TRNT	PLA	IT + OLIN-EST	ES		B NUMBE F SAMPL	E: SEDIMENT	2310163	RE- COMPL	CEIPT DATE:	03 Ju	A.
	COLUMN		7		8		9.1		10	11		12		
	ANALYTE				10		11		13	25		30		
	MD/X4.,	*****	At.		SE		AE		26	IA.		n		
B SHAZ	DESCRIPTION													
89723	MULK 1,2,3 >2.0	CONC	17.2	- 1	0.599		0.400	- 1	91,5	70.7		14600	212	
		TARC		- 1	84.8	- 1	94.4		09.2	97.8		230.0	i	
		OID.	17.5		0.599	- 3	0.400	. 3	01230209	71.8 01230209		14800	- 1	
		-00.550	HGA AUTH	- 1	41602612		RGA AUTH		WHE SHEET	1 0/250564		41230209	+	
89724	BLEK 1,2,3 <2.0	CONC	17.4	1	0.998	1	0.599	81	128	1 73.5		7850		
		MREC		- 1		1		- 8		100000		1	î	
		DUPL	01230209	- 1	01260215	1	01260215		01230209	01230209			1	
			HEA AUTH			1	MEA. AUTH		J. L. Jersey	Lauciacoa	9 10	01230209		
SLACI	METHOD BLANC OT	CONC	1.20	1	40.700	1	< 0.100	- 51	<1.00	] ⊲0,100		+2.00	ĵ.	
		THEC DUPL		!		!		1		1		927775	1	
		000	01230209	1	01260215	- 1	01260215	1	01230209	01210209	8 9	01230209	+	
			HGA AUTH			1	HGA AUTH		***************************************	Laurandea		01630204	,	
BL#02	LCS 01	DONC	21.6	1	4.10	ı	4.50	1	49.9	51.0	- 1	110	13	
		DUPL	108.0	1	05.0	- 4	90.8,	-1	99.8	102.0	- 1	110.0	j.	
			01230209		01260215	i	01260215	- 1	G1230209	01230209	- 4	01230209		
			REA AUT.			-	HEA AUTH	3.5				- Transcar	M	
91.#03	EXTERNAL OC 01	CONC	16.6	1	1.49	1	4,49	1	282	1 195	1	24900	1	
		TRUC		1		ļ		1		1	- 1		1	
		OID	01230209	1	01260215	ł	01260215	- 1	01230209	01230209	- 1	01230209	- 1	
			HIGH MUTTH		TO STATE OF	î	HGA AUTH			a maneay	-4	U1E3GED4	1	
NI I	Hickel					1	E	Seteniu						
AS.	Silver							Zine						
LA.	Barron					- 3		Iron						
ША	Sarium							Iron						

50500								
JOB FILE	E: 89723						DATE	03 /
			ENVERTMENTAL	CHEMISTRY BRANCH -	DATA REPORTING SHEE	T C PAGE X OF X	,	
			•					
J08 1	DESCRIPTION: GREE	S BAY	HOUSELE TRAFF	PLANT - OLIN-ESTES	JOS NUMBER:	005490-92310183	RECEIPT DATE:	03
	RESERVATIVE:				TYPE OF SAMPLE:	SCOIMENT	COMPLETION DATE:	3 (
	COLUMN			14				
	MG/KG			33 HD				
	marku		P. M.	PH.				
SAMP I	DESCRIPTION							
89723	BULK 1,2,3 >2.0	CONC	352	1 205.0				
			104.0	105.2				
			385	0.200				
			HGA AUTH					
89724	BULK 1,2,5 Q.0	CONC	434	0.600				
		TOREC		i i		510		
		DUPL DID	01230209	01260215				
		4,4	HIGA AUTH	I among is				
GLACT	HETHOD BLANE GT	CONC	<0,100	<0.100				
		TREE		i i	4			
		DIB	91230209	01260215				
		775	HEA AUTH	Same of the same o				
B1 605	LCS 01	CONC	19.6	1 5.00		44		
			98.0	100.2				
		DUPC	01230209	01260215				
			HILA AUTH	1 0 000 1				
81.403	EXTERNAL OC 01	CONC	492	[ 0.997 ]				
		MEC		i i				
		DUPL	01230209	01260215				
			HGA AUTH	T Pressers				
HN	Manganetae			1	10 Polybdenu			

DATE: 17 JUL

	ESCRIPTION: GRE ESCRIPTIVE:	EN SAY	MOBILE TRAT	PLANT - OLIM-ESTI		MBER: 0354P0-92 MPLE: SEDIMENT		RECEIPT GATE: APLETION DATE:	
	COLUNN		1	2	3	4	5	ò	
	AMALYTE		137	138	139	140	141	142	
	15/65		PC8-1016	PC8-1221	PCR-1232	PG8-1242	POI-1248	PC8-1254	
\$ 942	DOSERFFICA								
89725	BULE 1,2,3 >2.0	cosc	<15.8	I <15.8	<15.8	351	1 <15.8	1 <15.8	7
			74.4	1	1	1	1	1	i
		DUPL		December	1	1	Harmon	1	1
		010	54830193	54830193	1 54831193	54830193	54830183	54830193	1
89726	BULK 1,2,3 <2.0	CONC	<b>427.1</b>	1 +27.1	1 41.1	1 3278	1 <27.1	1 427.1	
		SHEC		1	1	1	T. Carrier	1	- 1
		DUPL		i	i	i	i	i	- i
		OCD	54830196	Sentotes	54030196	54830196	54830196	54830196	i
81,001	HETHIG BLANK OT	COVC	4.3	1 <8.3	1 +5.3	1 45.3	4.3	48.3	1
		MREC		1			1		- 1
		DUPL		E-constant	1	Partition	i	1	- i
		ote	54830193	54830193	54830193	54830193	54830153	54830193	i
BTNOS	LCS OI	CONE	0.86	N/A	1 8/8	I N/A	1 WA	1 s/A	£
		2000	102.8	1	1			1	- 1
		DUPL		İ	1	1	i	i	- 1
		010	54830193	54830193	54630193	54830193 -	54830183	54830193	i
POR-1016	PCB-1016				PCS-1221 PCS	-1221			
PC8-1232	PC8-1232				PC8-1242 PC8	Control of the contro			
PC8-1245	PC8-1248				POI-1254 PCI	-1254			

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Jobfile Number: 89725
Project: GREEN BAY MOBILE TRNT PLANT - OLIN-ESTES
Account Number: 0054PD-92310183
Date Received: 03 JUL 00

Job#	Sample	Tat	Analyte	¥	REC	*	SDUPL	RPD	OID
						*****		*********	
89725	89725	143	PCB-1260	8	5.2	84	. 8	0.5	54830193
	89725	145	TclXYL-S	88	3.9	86	. 7	2.5	54830193
89725	89725	146	DCLBP	74	1.4	73	.0	1.9	54830193

Page 1

am Ffu	E: 89727							DATES	17 1
				- 0000000000000000000000000000000000000			20702722 - 070-200		
			NYTROMNENTAL	CHEMISTRY BRAND	H + DATA REPO	RTING SHEET ( PA	ge tor 63 ***		*****
JDB 1	DESCRIPTION: THE	W 747	MORTLE TENT	M 487 - NI 18-P51	95 40	s kumbeln: 0054PD	-92310183	RECEIPT SATES	ot .
	RESERVATIVE		marte rapi	12.10		F SAMPLE: SEDIME		PHPLETION DATE:	
	COLUMN			2	3	4	.5	6	
	ANALYTE			294	296	297	303	304	
	W67KG		MAPRIH	ACENAY	ACENAP	FLUCKE	PHESAM	ANTRAL	
SAMP #	DESCRIPTION								
89727	BULC 1,2,3 >2.0	COMC	29.9	1 48.4	1 45.4	1 10.8	1 70.0	1 10.2	1
		MEC SUPL	46.0	50.0	64.0	67.5	71.5	70.5	- 1
			06890198	08890198	03890198	06090196	68890198	08890198	- 1
89778	BILC 1,2,5 <2.0	DOMC NAME	513	43.4	72.0	169	1100	215	1
		BUPL		1					- 1
		010	06890198	] G8890198	08890198	06890198	08890196	06990198	i
BLW01	HETHOD BLANK OT	CONC	<3.3	[ -3.3	1 43.3	43.3	1 43.3	1 <3.3	1
		MEC		1	1	1	į	1	- 1
		OID	96890198	08890198	03890198	08890196	06890196	C6090198	i
BL#02	1.CS 01	COME	36.0	1 34.0	1 44.7	1 45.3	1 40.3	1 43.3	
			54.0	1 51.0	1 67.0	68.0	72.5	65.0	i
		DID	05890198	05890198	08890198	08890198	00090196	06890198	1
NAPHTH	Maphthelene				ACENAY	Acenaphthylene			
AGENAP	Acenaphthene				FLUCRE	Fluorene			
PHENNA	Menanthrene				AHTRAC	Anthracene			
					*				
				2					
					1.00				

### BANTER   177  #### BANTER   177  ##################################		1.												
### CONTROL   CO	+													
DOB DESCRIPTION: ORDER BAY MOBILE TENT PLANT - DLIN-CRIES   JOB NUMBER: C054P0-92310163   RECEIPT DATE: 03   TYPE OF SAMPLE: SEGURENT   OCHUNETION DATE: 17   TYPE OF SAMPLE: SEGURENT   OCHUNETION DATE: 17   TYPE OF SAMPLE: SEGURENT   OCHUNETION DATE: 17   TYPE OF SAMPLE: SEGURENT   OCHUNETION DATE: 17   TYPE OF SAMPLE: SEGURENT   OCHUNETION DATE: 17   TYPE OF SAMPLE: SEGURENT   TYPE OF SAMPLE: SEGURENT   TYPE OF SAMPLE: SEGURENT   TYPE OF SAMPLE: SEGURENT   TYPE OF SAMPLE: SEGURENT   TYPE OF SAMPLE: SEGURENT   TYPE OF SAMPLE: SEGURENT   TYPE OF SAMPLE: SEGURENT   TYPE OF SAMPLE: SEGURENT   TYPE OF SAMPLE: SEGURENT   TYPE OF SAMPLE: SEGURENT   TYPE OF SAMPLE: SEGURENT   TYPE OF SAMPLE: SEGURENT   TYPE OF SAMPLE: SEGURENT   TYPE OF SAMPLE: SEGURENT   TYPE OF SAMPLE: SEGURENT   TYPE OF SAMPLE: SEGURENT   TYPE OF SAMPLE: TYPE OF SAMPLE: SEGURENT   TYPE OF SAMPLE: SEGURENT		109 FILE	1 89727										DATE	17 3
Type of Sample: Sedement   Completion date: 17				6	ENVIRONMENTAL	CHE	HESTRY BRANCY	- DATA REPO	eting S	HEET ( PAGE	2 OF 43 *			•••••
### ### ##############################				g BAY	HOBILE TRHE	PLAN	IT - OLIN-ERTI				70.00000 00000000			
### ANALYTE			COLUMN		7		4	9		10	11		12	
SAMP # DESCRIPTION							170010	100000		170				
### BULK 1,2,3 >2.0 COAC 99,9			US/KG		FLANTHE		PTRENE	CHRYSE		SAANTHR	SBFLANT		BEPLANT	
SPEC 85.0   85.0   88.5   94.5   90.0   78.0		SAMP #	DESCRIPTION											
### BULK 1,2,3 42.0 CDMC 1690   1570   992   720   767   521   521   520		89727	BULK 1,2,3 >2.0	COAC	99.9	1	82.1	1 66.2	1	29.9	1 53.4	1	32.4	1
### BLAD1   LCS 01   CDMC 30.0   42.3   59.5   51.0   68.0   61.0   51.0   52.0				10000	85.0	ij	85.0	88.5	i	94.5	90.0	i	78.0	i
### ### ##############################					********	- 1		1	a - I			. 1		- !
Name				Dia	900An1AD		00090190	1 geesories	8 8	00090198	1 sousetva		U8890198	
SLAD1   HETHOD BLANC 01   CONC   <3.3   <3.3   <3.3   <3.3   <3.3   <3.3   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3		69728	BULK 1,2,3 42.0			1	1570	1 992	t	720	1 762	1	521	1
DID						-!		1			1	. !		1
#L#01 HETHOD BLANK 01 CONC <3.3   <3.3   <3.3   <3.3   <3.3   <3.3   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.5   <3.				010	88890198	i	08890198	G8890198	8	06090198	08873198	i	00880198	i
### DESCRIPTION			METROS SLAWE GO		411	ý	1.41		1	41	1-11			
DID   08890198   088		SCAU!	HETHOD SCHOOL OT			- 7	43.3	1 3.3	1	*3.3	3.3	- 1	43.3	- 3
BLAG2 LCS 01						ĵ	Extraces a	H-arane	5 Ì		Hamme	i		i
TANTHE Fluoranthene CHRISE Chrysene  TANTHE SANSTHE Benzo(a)Anthracene				018	65090198	1	08890198	05890198	Ę [	05990198	05090198	- 1	08890198	9
FLANTRE Fluoranthene CHRISE Chrysene  DIPL 010 08890198 03890198 08890198 08890198 08890198 08890198  PYREME Pyrene CHRISE Chrysene  BARTIR Benzo(a)Anthracene		BLAGS	LCS 01			1	N 100 T 500 N N	10.4 00.000000				ī	61.0	31
OLD 08890198   0889019					75.0	- !	63.3	89.0	!	76.5	1 90.0	1	91.5	
CHRYSE Chrysene BAANTHR Benzo(a)Anthrucene					05890198	î	08890198	G8890198	i	08890198	3 68890198	- 1	08890198	
CHRYSE Chrysene BAANTHR Benzo(a)Anthrucene		FLANTAE	Fluoranthese					proper	Durane					
BBFLANT Benzo(b)Fluoranthene BCFLANT Benzo(k)Fluoranthene									100					
		BBFLANT	Benzo(b)Fluoran	thene				RKFLANT	Benzo(	k)Fluoranthen				

JOB FILE: 89727

JOB 1	DESCRIPTION: GREE RESERVATIVE:	EN BAY	HOUSE TRHE	PLANT - DLIN-ESTES		MER: 0054PD-92 WLE: SEDIMENT	\$10183	RECEIPT DATE: COMPLETION DATE:	03 a 17 a
	COLUMN,		13	14	15	16	17	10.	
	ANALYTE			316	517	318	355	327	
	UG/KG	****	BAPYRE	RIZSFIR	DEARANT	8-CHI-PY	ZHENAPH	2F12P-5	
SAMP #	DESCRIPTION								
19727	BULK 1,2,3 >2.0	CONC	35.6	39.4	5.1.1	143	1 31.8	1 72.6%	- 2
		MEC	79.5	92.0	88.0	88.5	1 56.0	62.5	- 1
		DUPL		1		1	1 33	1	- 8
		010	06890198	08390198	08890198	00090198	08890198	08890198	i
9728	BULE 1,2,3 <2.0	CONC	747	637	105	678	1 574	1 52.4%	119
		MEC		1			1	1 36.45	
		DUPL		İ	i	15	i	1	
		CED	08890198	08890198	08890198	06690198	38890198	08890190	i
L#01	HETHOO BLANE DT	CONC	43.3	1 4.3	4.3	1 43.3	1 4.3		
		MREE		100000	10000	1	13.3	77.6X	
		DUPL.		Ē		i	î		- 1
		010	C8890198	06890198	8890198	06890198	08390198	88890198	i
#02	LCS 01	COMC	50.0	1 56.7	60.3	1 57.7	1 40.3	1 47 47	
		TREC	75.0	0.58	90.5	1 86.5	1 60.5	67.6%	
		DUPL			Getting :		1	12	24
		010	08890198	08890198	08890198	08890198	1 03590198	08890195	

Dibenzo(A, E)Anthracene 2HeKAPH 2-Nethylnaphtholene

8-CHI-PY Banzo(G,H,1)Perylene

2FLBP-S 2-Fluorobiphonyl(Surrogate (30-115 S))

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JOB FILE: 89727
                                                                                                    DATE: 17 JUL
      ENVIRONMENTAL CHEMISTRY BRANCH; - BATA REPORTING SHEET ( PAGE & OF 4 )
        JOB DESCRIPTION: GREEN GAY MOBILE TRNE PLANT - DLIN-ESTES
                                                             JCB NUMBER: 0054FD-92310163
                                                                                           RECEIPT DATE: 03 JUL
      CHEM. PRESERVATIVE:
                                                          TYPE OF SAMPLE: SECTIONS
                                                                                         COMPLETION DATE: 17 JUL
                 EDLUM..... 19
                  ANALYTE...... 328
                  UG/KS..... PTERP-S
      SAMP # DESCRIPTION
      89727 MIAK 1,2,3 >2.0 COME 64.9%
                           MRSC 63.5
                           DUPL
                           010 08890198
            BULK 1,2,3 <2.8 CONC 63.4%
                           tarc
                           DUPL
                           010 08890198
     NLACT METHOD BLANK 01 COMC 65.2%
                           TAREC
                           DUPL.
                           GED 08890198
ñ
     8L#02 LCS 01
                           DOME 58.6%
                           MALC
                           DUPL
                           are passones
     PTERF-S p-Terphenyl-b14(Surrogete (18-137 S))
                                                                                                             + 5
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150

Jobfile Number: 89727
Project: GREEN BAY MOBILE TRNT PLANT - OLIN-ESTES
Account Number: 0054PD-92310183
Date Received: 03 JUL 00

Job#	Sample	Tat	Analyte	% REC		* SDUPL	RPD	OID
					*			
89727	89727	290	NAPHTH	46.0		56.0	19.6	08890198
89727	89727	294	ACENAY	50.0		49.5	1.0	08890198
89727	89727	296	ACENAP	64.0		67.5	5.3	08890198
89727	89727	297	FLUORE	67.5		67.5	0.0	08890198
89727	89727	303	PHENAN	71.5		73.5	2.8	08890198
89727	89727	304	ANTRAC	70.5		73.0	3.5	08890198
89727	89727	306	PLANTHE	85.0		98.0	14.2	08890198
89727	89727	307	PYRENE	85.0		88.5	4.0	08890198
89727	89727	309	CHRYSE	88.5		89.5	1.1	08890198
89727	89727	310	BAANTHR	94.5		96.0	1.6	08890198
89727	89727	313	BBFLANT	90.0		90.0	0.0	08890198
89727	89727	314	BKFLANT	78.0		74.0	5.3	08890198
89727	89727	315	BAPYRE	79.0		84.0	6.1	08890198
89727	89727	316	I123PYR	92.0		87.0	5.6	
89727	89727	317	DBAHANT	88.0		81.5	7.7	08890198
89727	89727	318	B-GHI-PY	88.5				08890198
89727	89727	322	2MeNAPH			82.5	7.0	08890198
89727	89727	- 5/2/31		56.0		66.0	16.4	08890198
		327	2F1BP-S	62.5		69.0	9.9	08890198
89727	89727	328	PTERP-S	63.5		63.9	0.6	08890198

Page 1

JOB FILE: 50720  DAT  AND  ENVIRONMENTAL CHEMISTRY BRANCH - DATA REPORTING SHEET ( PAGE 1 OF 1)  JOB DESCRIPTION: GREEK BAY HOBILE TRNT PLANT - OLIN-ESTES JOB NUMBER: COSEPO-92310183 RECEIPT DAT	DATE: 14 JUL 1  (1)  ENVIRONMENTAL CHEMISTEY BRANCH - DATA REPORTING SHEET [ PAGE 1 OF 1 ]  FINAL TYPE OF SAMPLE: SCOMMENT COMPLETION DATE: THE JUL C COMPLE										
SAMP # DESCRIPTION   SHEEK RAY MOBILE TENT PLANT - OLIN-ESTEX	December   Committee   Commi						44				
### PAGE 1 OF 1 3 ***  ################################	ENVIRONMENTAL CHEMISTRY BRANCH - DATA REPORTING SHEET ( PAGE 1 OF 1 )  1001 GREEK RAY MOBILE TRIP PLANT - CLIN-ESTER  1700 NUMBER: COS400-92310183  1700 OF SAMOLE: SEDIMENT  1		+1 -4								
### AND PROCESSOR OF COME 27800   1   2   3   4   4   4   4   4   4   4   4   4	ENVIRONMENTAL CHEMISTRY BRANCH - DATA REPORTING SHEET ( PAGE 1 OF 1 )  ***TOTAL GREEK RAY MOBILE TRAF PLANT - CLIN-ESTER  ***TOTAL GREEK RAY MOBILE TRAF PLANT - CLIN-ESTER  ***TOTAL GREEK RAY MOBILE TRAF PLANT - CLIN-ESTER  ***TOTAL COLUMNA***  ***TOTAL COLUMNA**	J08 F1L	E: 89729							0475+	46 116
JOB PERCEIPTION: BREEK BAY MOBILE TRNF PLANT - OLIN-ESTEE JOB NUMBER: COSAPO-02310183 RECEIPT DATE CARM. PRESERVATIVE: 10 1 2 3 4 4 100 100 100 100 100 100 100 100 100	TOR1 SREEK RAY MOBILE TRN7 PLANT - CLIN-ESTES TYPE OF SAMPLE: SEDIMENT COMPLETION DATE: DIS JUL C COMP	. N	10							mich	14 300
CATM. PRESERVATIVET TYPE OF SAMPLES SEDIMENT COMPLETION DATE  COLLAM	TYPE OF SAMPLE: SEDIMENT COMPLETION DATE: 14 JUL 1  COLLAMS	2	7/7		NALMENTAL	CHEMISTRY BRANC	# - DATA REPORTE	NG SHEET ( PAGE	1 OF 13		*******
CARM. PRESERVATIVET TYPE OF SAMPLE: SEDIMENT COMPLETION DATE COLORS	TYPE OF SAMPLE: SEDIMENT COMPLETION DATE: 14 JUL 1  COLLAMS	100	TOTAL PROPERTY.	te arr	MADELE TENE	WART - ALIV-PET	15 100 W	Mars. 206/20-0	*******	APPOPULATION AND A	
######################################	MALYTE				MODILE INN	PERMIT OF THE EST				COMPLETION DATE:	14 JUL
######################################	MALYTE		DOLUMS		1	2	3	4			
### DESCRIPTION  ###################################	### PTION   ###		AMALYTE		66	100					
#89729 HUK 1,2,3 >2.0 COMC 27800	2,3 >2.0 COMC 27000		MG/EG	*****	100	TVS	080	TRIPE			
SREC DUPL 20430   10150188   55990189   55990191   89750   BLUC 1,2,3 *2.0   CONC 47708   *4   648   350 8   5482   5492191   610 60040193   10150188   55990189   55990191   84401   84401   8450   84501   8	SPEC BUPL 20430   10150188   55990189   55990191	SAMP #	DESCRIPTION								
BUPL 20400 OID 60040193   10150188   55990189   55990191  BU730   BULC 1,2,3 42.0   CONC 47700   44	BLANK 01 CONC 4700   44   640   350 8   35990189   35990191    BLANK 01 CONC 4100   44   435   8 J   3880	89729	BULK 1,2,3 >2.0	COAC	27800	1 4	1 67	54 m	1		
89730 BULC 1,2,3 +2.0 CONC 47700   <4	010 60040193   10150188   55990189   55990191    2,3 +2.0				****	1	!	1	31		
89730 BUCC 1,2,3 +2.0 CONC 47708   <4	22,3 +2.0 CDMC 47700   <4   640   250 8    22,3 +2.0 CDMC 47700   <4   55990189   55990191    8LANK 01 CDMC 4100   <4   <35   8 J    22,5 SUPL   SUPL   SUPL   SUPL   SUPPL					10150188	55990189	55990191			
\$L408 EXTERMAL QC 01 COMC 19000   N/A   N/	TREE SUPL CID 60040193   10150188   55990189   55990191					50	28		135		
SLADS EXTERMAL OC 01 COMC 19000   N/A   N/	DUPL OID 60040193   10150188   55990189   55990191	89730	BULC 1,2,3 +2.0	DONE	47700	1 46	640	350 8	1		
#L408 MEF400 BLANK 01 CONC +100   *4   *35   B J	SLANK 01 CONC *100   *4   *35   8 J   *35   8 J   *35   8 J   *35   8 J   *35   8 J   *35   8 J   *35   8 J   *35   8 J   *35   8 J   *35   8 J   *35   8 J   *35   8 J   *35   8 J   *35				413	1		1	1		
#EF#00 BLANK 01 CONC +100   *4   -35   B J   1250	BLANK 01 CONC *100   *4   *35   B J    100				60040193	10150188	55990189	55990191			
\$285   0UPL   010 60040193   10150188   55990189   55990191	TREC   DUPL					WOS					
0UPL 010 60040193 10150188 55990189 55990191   BLACZ LCS D1 COMC 9890   W/A 932   948   91.7   93.3   0UPL 010 60040193   10150188   55990189   55990191   BLACS EXTERMAL GC 01 COMC 19000   N/A	OUPL OLD 60040193   10150188   55990189   55990191	81401	METHOD BLANK OT		4100	1 4	<22	100	1		
BLACZ LCS D1 CONC 9890 N/A 932 948   9800 98,9 91.7 93.3   9890.0   98.7 93.3	COMC 9890   N/A   932   948   949   91.7   93.3   949   91.7   93.3   949   91.7   93.3   949   91.7   93.3   949					i de la companya de l	i	i	i		
\$8.00 98.9 91.7 93.3   91.7   93.3   93.3	MRSC 98.9 91.7 93.3 90PL 01D 62D40193 10150188 55990189 55990191 10150188 55990189 55990191			010	60040193	10150168	5599018P	55990191	1		
BL#05 EXTERMAL QC 01 COMC 19000   N/A   N/	DUPL DID 63040193   10150188   55990189   55990191   AL GC 01 CONC 19000   N/A	BLAC2	Les et	COHC	9890	1 N/A	932	948	9.5		
01D 63D40193   10150188   50990189   55990191    8L#05 EXTERMAL GC 01 COMC 19000   N/A   N	01D 60040193   10150188   55990189   55990191    AL GC 01 CONC 19000   N/A   N/A   N/A    TARC            DUPL            CED 60040193   10150188   55990189   55990191				98.9	1	91.7	93.3	1		
TAREC DUPL	TREC				63040193	19150188	55990189	55990191	1		
SAEC DUPL	TREC					4.000	12000	VEX	50		
DUPL	DUPL CED 60040193 10150188 55990189 55990191	80,000	EXTERNAL GC 01		19000	1 4/4	N/A	1 W/A			
GED 60040193   10150188   55990189   55990191						i	i	i	i		
	Organic Carbon IVS Total Volatile Solids			GED	60040193	10150188	55990189	55990191	3		* 1
		TOC	Total Organic t	Carton							
64G 011 and Grease 18PM Total Recoverable Petroleum Hydrocorbons	nd Grease TAPM Total Recoverable Petroleum Hydrocorbons	046	OIL and Grease				Tape Tot	tal Recoverable	Petroleum Hyr	dracarbons	

18 E

Jobfile Number: 89729

Project: GREEN BAY MOBILE TRNT PLANT - OLIN-ESTES Account Number: 0054PD-92310183 Date Received: 03 JUL 00

Job#	Sample	Tet	Analyte	* REC	SDUPL	RPD	OID
89729	BL#02	100	0&G	91.7	91.2	0.5	55990189
89729	BL#02	104	TRPH	93.3	93.0	0.3	55990191

Page 1

8/3/60 90700 DATE: 31 AUG C ENVIRONMENTAL CHEMISTRY BRANCH - DATA REPORTING SHEET ( PAGE 1 OF 2 ) RECEIPT DATE: 15 AUG C JOB MUMBER: 0054PD-923101B3 JOB DESCRIPTION: GREEN BAY - OLIN-ESTES TYPE OF SAMPLE: WATER COMPLETION DATE: 30 AUG C CHEM, PRESERVATIVE: NONE COLUPH...... 1 140 141 142 138 139 AMALYTE ...... 137 PPB..... PCB-1016 PC8-1254 PCB-1221 PC8-1232 PC3-1262 PCB-1248 SAMP # DESCRIPTION ĄĮ. 40.24 1 40.24 40.24 40.24 40.24 CREEN BAY CONC <0.26 SUPPLY WATER SHEC 8/10/00 0930 DUPL. 54830238 54830238 010 54830238 54830238 54830238 54830238 1 <0.25 49.25 40.25 40.25 40.25 BLECT METHOD BLANK OT COMC <0.25 TREC DUPL. 54830238 54530238 54830238 \$4830238 54830238 010 54830238 1 4/A H/A N/A H/A 8L#02 LCS 01 CONC 0.24 H/A MRC 96.0 DUPL 54830238 54830238 54830238 010 54830238 54830238 54830238 PCB-1221 PCB-1221 PCB-1016 PCB-1016 PCB-1242 PCB-1242 PCB-1232 PCB-1232 PCB-1248 PCB-1248 PCB-1254 PCB-1254

2 X DATE: 31 AUG 1 JOB TELE: 90789 ENVIRONMENTAL CHEMISTRY BRANCH - DATA REPORTING SHEET ( PAGE 2 OF 2 ) JOB NUMBER: 0054P0-92310183 RECEIPT DATE: 15 AUG L JOB DESCRIPTION: GREEN BAY - OLIN-DSTES COMPLETION DATE: 30 AUG I TYPE OF SAMPLE: MATER CHOM. PRESERVATIVE: MONE 9 DOLUMN...... 7 145 146 ASALTIE...... 143 PPB..... PCS-1260 TEIXYL-S DOLBR BI. SAMP # DESCRIPTION 1 71.3% 67.5% GREEN BAY DOME <0.24 tetc SUPPLY WATER 8/10/00 0930 DUPL 010 54830238 54830238 54830238 METHOD BLANK O1 CONC <0.25 75.3% BL#01 MEC DUPL 54830238 54830238 010 54830238 74.9X 81.402 LCS 01 DDMC 0.24 77.8% 18EC 96.0 DUPL 010 54830238 54830238 54830238 telayu-s 2,4,5,6-Tetrachloro-m-sylene(Surrogate(40-140 WS PC8-1260 PC8-1260 Decachlorobiphenyl(Surrogate (40-140 W83) DOLEP

PK 100 scace

DATE: 31 AUG 0

100 50	SCRIPTION: GREE	W RAT	OLIN-DETER		JOB W	MMIER: 005470-9	2310183	RECEIPT GATE:	17 AUG
	SERVATIVE:				TYPE OF S	AMPLE: SEDIMENT		MPLETION DATE:	51 AUG
	COLUMN		7	2	3	4	5	4	
	ANALYTE			138	139	140	141	142	
	UG/XG			PC8-1221	PC8-1232	PCR-1242	PC8-1248	PCB-1254	
SASP #	DESCRIPTION								
90808	GREEN BAY	COMC	<8.69	<8.69	43.69	1 143	48.69	<8.69	1
	1400-1 8/10/00	MARC	134.8	1	1	1	1	1	1.
	UNDERFLOW	BLPL		Discourse	Lacrosco	l constant	1		
		010	54830238	54830238	54830238	54830238	1 54830238	54830238	1
90809	GREEN BAT	DONE	<9.08	<9.08	1 <9.08	1 154	«P.08	<9.08	1
,000	1400-2 8/10/00	MET		1	1	1	1	1	1
	UNDERFLOW	DUPL		F	1	1	1	1	1
		010	54830238	54830238	54830238	54830238	54830238	54830238	1
90810	SECEN BAY	POSE	e9.37	1 <9.37	49.37	1 88.3	<9.37	1 <9.37	1
years	1505-1 8/10/00	TREC	100000	0,00000		1 ***	Sections	1	1
	INDERFLON	DUPL.		î	ii .	i	100	4	1
		OLD	54830238	54830238	54830238	54830238	54830238	54830238	1
90811	GREEN BAT	CONC	<8.81	1 <5,80	1 <8.83	1 126	<8.80	48.60	1
	1505-2 8/10/00	MEC		1000000	10000	1		1	1
	UNDERFLOW	DUPL		i	Si errenere	Laurence	Estate and	1	- 1
		010	54830238	54830238	1 54830238	54830238	54830238	54830238	1
90812	GREEN BAY	CONC	48.86	<0.50	1 +8.88	1 153	45.88	<3.68	1
	1525-1 8/10/00	WIL		i	1	1	E.		1
	UNDERFLOW	DUPL		1	1	4	Manager 1	1	- 1
		ate	54830238	54850238	54830238	54830238	54830238	54850238	1
90813	GREEN BAY	CONC	<5.93	<8.93	1 48.93	1 160	-8.93	< 8.93	1
	1525-2 8/10/00	TARC		i	1	1	1		1
	UNDERFLOW	DUPL		1	1	4	V	1	1
		010	54830238	54830238	54830258	54830238	54830238	54830238	- 2
PC9-1016	FC9-1016				908-1221 P	CB-1221			
	PC8-1212				PEB-1242 P				
0.750.0000	PC8-1248				PCB-1254 P	FP-125A			

\* 8 8

JOB - FILE	: - P080B			4353				DATE:	11 AU
		6	WYTROMHENTAL C	HEMISTRY BRANCH	- DATA REPORTIN	NG SHEET ( PAGE	20 6) ****		
						Dunanti ditta			
JOB 0	ISCRIPTION: GREE	DN BAT	+ OLIM-ESTES		J08 N	MBER: 0054FD-92	\$10183	RECEIPT DATE:	17 AU
CHEM. PR	ESERVATIVE:					UMPLE: SEDIMENT	0.00	PLETION DATE:	31 AU
	COLUMN		1	2	3	4	5	Δ	
	ASALYTE		137	138	139	140	141	142	
	us/ks		PCB-1016	PCB-1221	PC8-1232	PCB-1242	PCR-1248	PC8-1254	
SAMP d	DESCRIPTION								
90814	GREEN BAY	rour	<9.21	49,21	1 49.21	1 154	1 <9.21	1 <9.21	1
- 500 17	1625-1 8/10/00	TREE			i	1	1	i	1
	UNDERFLOW	DUPL		Sycamo	A constant	1,55,555	1	1	1
		010	54830238	54830238	54830238	54630238	54830238	54830238	1
90815	GREEN BAY	town	<9.02	+9.02	1 -9.02	1 180	<9.02	1 <9.02	1
-0412	1625-2 8/10/00	TOREC			1	i	1	1	i
	UNDERFLOW	DUPL	E1880000	64670370	B/931074		1 54670378	E1670770	1
		010	54830258	54830238	1 54830238	54830238	54830238	54830238	1
90816	GREEN BAY	DONC	<8.60	<8.60	1 <8.50	130	<8.60	<8.60	1
	1715-1 8/10/00	TREC			1	1	1	1	1
	UNDERFLOW	DUPL	54850238	54830238	54830238	54830238	54830238	54830238	-
		010	7-03-063-0	Janaisa	1 31411635	7 31031230	1 3103123	1 - 10000	
90817	GREEN BAY	CONC	<8.87	<8.87	48.87	152	<8.87	<0.87	1
	1715-2 8/10/00	MEC			į.		1	1	
	UNDERFLON	DUPL	54830238	54830238	54830238	54830238	54830238	54830238	- 1
						*	1 - 00 / 00 / 00 / 00	.4	
90818	GREEN BAY FEED	CONC	<16.3	<16.3	1 <16.3	2565	<16.3	<16.3	1
	1400-1 8/10/00	TREC		1	!	1	!	!	!
		OUPL.	54830238	54830238	54830238	54830238	54830238	54830238	
		10073	10-40 (10 m)V		1.0000000000000000000000000000000000000	**************	1.5 m(6.035)	A. 180 DAS	
90519	DREEN BAY FEED	CONC	<17.4	<57.4	117.4	2000	<17.4	<17.4	1
	1501-1 8/10/00	THEC		1	1	į.	1	!	1
		DUPL	54830238	54830238	1 54830238	54830238	1 54831238	54830238	1
			24027630	, Michigan	1 3-130634		4 - 10	4	
	PC8-1016				PC8-1221 PC8				
	PCB-1232				PC9-1242 PC8				
PER: 1248	PE8-1248				PC8-1254 PC8	1634			
				4					

JD9 FILE: 90809. DATE: 31 AUG C JOS DESCRIPTION: GREEN BAY - DLIN-ESTES JOS MUMBER: 0054PG-92310183 RECEIPT DATE: 17 AUG ( CHEM, PRESERVATIVE: TYPE OF SAMPLE: SEDIMENT COMPLETION DATE: 31 AUG C DOLLMY ..... 1 5 AMALYTE..... 137 138 139 140 142 141 UG/KG..... PCB-1016 PEB-1221 PC8-1242 PC8-1254 PC8-1232 PC8-1248 SAMP # DESCRIPTION RX. GREEN BAY FEED CONC <13.2 <13.2 <13.2 2137 <13.2 <13.2 90820 1525-1 8/10/00 THEE DUPL 010 54830238 54630236 54830238 54830238 54830238 54830238 90821 GREEN BAT FEED CONC <14.2 1 <14.2 <14.2 2108 ×14.2 <14.2 1625-1 8/10/00 TMEC DUPL 010 54830238 54830238 54830238 54830238 54830238 54830238 90822 GREEN BAY FEED CONC <12.1 1 <12.1 <12.1 1969 <12.1 <12.1 1715-1 8/10/00 TARCC DUPL 54830238 54830238 54830238 54830238 54830236 010 54830238 BLACT HETHOD BLANK OT CONC <6.25 4.25 46.25 46.25 46.25 46.25 DUPL 010 54830238 54830238 54830238 54830238 54830238 54830238 LCS 01 COMC 0.625 I N/A N/A I N/A N/A N/A TAKEC 100.0 DUPL 010 54830238 54830238 1 54830238 34830238 54830238 54830238 PC8-1221 PC8-1221 PCB-1016 PCB-1016 PCB-1232 PCB-1232 PEB-1242 PEB-1242 PCB-1254 PCB-1254 PCB-1248 PCB-1248

JOB FILE	: 90603			1.00			DATE: 31 AC
	-	(	NVIRONMENTAL	CHEMISTRY BRANCH	- DATA REPORTIN	G SHEET ( PAGE 4 OF	6)*************************************
10000	ESCRIPTION: CRE	EN BAY	- ULIN-ESTES			MBER: CCS4PD-92310163 MPLE: SEDEMENT	RECEIPT DATE: 17 AL
	COLUMN		7	8	9	10	
	AMALYTE			145 TelXYL-S	146 BCLBP	900 % HOISTU	
SAMP #	DESCRIPTION						
90808	CREEN BAY	DONC	13.7	83.23	83.5%	1 16%	
,,,,,,,	1400-1 B/10/00			0.18	65.8	i i	
	UNDERFLON	DUPL	54830238	54830238	54830238	55150234	
		3000	34639236	) sensoran	) seasons	33 (300.34	
93809	GREEN BAY	CONC	21.2	80.5%	1 67.0%	1 19.1%	
1000	1400-2 8/10/00	TREC	Cara	i	j	i i	
	UNDERFLOW	DUPL	54830238	54830238	54830238	55150234	
			2132	4) 5) (FOR STORM	1.0000000	3033335000 63	
90810	GRIEN BAY	CONC	7.48 4	1 02.0%	76.6%	21.6%	
	1505-1 8/10/00	MEC		i	1	1	
	UNDERFLOW	DUPL	54830238	54830238	54830238	55150234	
						Water Park	
90611	GREEN BAT	CONC	3.69 J	82.4X	74.8%	16.6%	
	1505-2 8/10/00	TREC		!	1		
	UNDERFLOW	DID	54830238	54830238	54830238	55150234	
90812	GREEN BAT	0040	7.23 J	67.3%	74.7%	18.1X	
	1525-1 8/10/00 UNDERFLOW	DUPL		1	1		
	INDORPLOW		54830238	54830238	54830238	55150234	
90813	GREEN BAY		14,9	65.5X	78.65	18.5%	
	1525-2 8/10/00 UNDERFLON	DUPL					
			54830238	54830238	54830238	55150234	
000/9000	V-0200200				Y-144 5 7 7		
DCL3P	Decachiorobiph	enyt (Si	rrogate (40-	140 WS23		i,5,6-Tetrachloro m xyle CENT MOISTURE	respond to Administration and

JOS - FELE: 91808 DATE: 31 AUG T JOB DESCRIPTION: GREEN BAY - OLIN-ESTES JOB NUMBER: 0054PG-92310183 RECEIPT DATE: 17 AUG 1 CHEM. PRESERVATIVE: TYPE OF SAMPLE: SEDIMENT COMPLETION DATE: 31 AUG ( COLUMN ..... 7 10 AKALYTE..... 143 145 146 900 UG/KG..... PCB-1260 TEIXTL-8 DOLEP \* HOISTU SAMP # DESCRIPTION 80 GREEN BAY CDMC 14.5 79.4% 90.8% 21.2% 90814 1625-1 8/10/00 NACC UNDERFLOW DUPL 54830238 54830238 010 54830238 55150234 90815 GREEN BAY COMC 12.4 78.4% 71.4X 19.7% 1625-2 8/10/00 MEC UNDERFLOW DUPL. DID 54830238 54830238 54830238 55150234 GREEN BAY COMC 14.3 76.6% 25.19 I 1 16.0% 90816 1715-1 8/10/00 TARC UNDERFLOW DLPL. OED 54830238 54830238 54830238 55150234 1 17.3% 90817 GREEN BAY DOME 9,70 74.8% 66.8% 1715-2 8/10/00 MEG UNDERFLOW DUPL. 54830238 55150234 GED 54830238 54830238 90318 GREEN BAY FEED CONC 164 1 81.2% 91.4% 52.5% 1400-1 8/10/00 NREC DUPL CID 54530238 54830238 54830238 55150234 90819 GREEN BAY FEED 80.9% j 97.1% DOMC 235 55.5% 1501-1 8/10/00 MREC DUPL 34830238 GID 54630238 54830238 55150234 PCB-1260 PCB-1250 TolXTL-S 2,4,5,6-Tetrachioro-m-xylenecSurrogate(40-140 WS % MOISTU PERCENT MOISTURE OCLEF Secachlorobipheryl (Surrogate (40-140 MS))

JOS. FILE: 90808 DATE: 31 AUG ( ENVIRONMENTAL CHEMISTRY BRANCH - DATA REPORTING SHEET ( PAGE 6 OF 6 ) JOB DESCRIPTION: GREEN BAY - OLIV-ESTES JOB MUMBER: 0054PD-92310183 RECEIPT DATE: 17 AUG ( CHEM. PRESERVATIVE: TYPE OF SAMPLE: SEDEMENT COMPLETION DATE: 31 AUG C CULUMY..... 7 AMALYTE..... 143 145 900 146 UG/KG..... PCB-1266 TelXYL-S DCLBP % MOESTU SAMP # DESCRIPTION RC. SHEEN BAY FEED CONC 166 78.33 98.7% 1 41.1% 1525-1 8/10/00 SHEC DUPL 010 54830238 54830238 54830238 55150234 90821 GREEN BAY FEED CONC 160 79.2% 86.2% 44.9% 1 1625-1 8/10/00 MRSC DUPL 010 54830238 54830238 54830238 55150234 GREEN BAY FEED COMC 163 78.8% 90.5% 36.3% 1715-1 8/10/00 MEC DUPL. OCD 54830238 54830238 54830238 55150234 METHOD BLASK OT DOSC +6.25 BL AD1 15.7 83.1% N/A MREC DUPL 010 54830238 14830238 54830238 55150234 BLAGE LCS 01 COMC 0.435 95.7% 81.3% 1 N/A MRSC 101.6 DUPL OID 54830238 54830238 54830238 55150234 PCB-1260 PCB-1260 fclX1L-S 2,4,5,6-Tetrachloro-m-xylene(Surrogate(40-140 WS DCLBP Decachiorobiphenyl (Surrogate (40-140 MS)) % MOISTLY PERCENT MOISTLINE c:

Jobfile Number: 90808 Project: GREEN BAY - OLIN-ESTES Account Number: 0054PD-92310183 Date Received: 17 AUG 00

#dot	Sample	Tst	Analyte	*	REC	*	SDUPL	RPI		OI	D
			PCB-1016			1	54.4	13	3.6	548	30238
90808	90808	143	PCB-1260	85	9.6	91	7.2	. 6	3.1	548	30238
90808	90808	145	TclXYL-S	87	1.6	8	7.2		5.6	548	30238
90808	90808	146	DCLBP	65	5.8	74	3.1	17	7.1	548	30238

Page 1

JOS DESCRIPTION: GREEN EAT - OLIS-ESTES	J00 F1	£1 90823	1	0124100	7 1				BATE:	23 OCT
JOS BESCRIPTION: CREEN RAY - OLIN-ESTES			E	VERDINENTAL C	NEMISTRY BRANCH	- DATA REPORTE	NG SHEET ( PAGE	1 01 9 3 ****		******
THE OF SAMPLET EXCIDENT COMPLETION CATE: 23 OCT CAMP. PRESERVATIVE: 24 5 6 7 7 6 6 7 7 6 6 7 7 6 6 7 7 6 6 7 7 6 6 7 7 6 6 7 7 6 6 7 7 6 6 7 7 6 6 7 7 6 6 7 7 6 6 7 7 6 6 7 7 6 6 7 7 6 6 7 7 6 7										
Time of Sample:   Time of Sample:   Color Colo	170	DESCRIPTION: CREE	EAY	OLIN-ESTES		J08 N	LMBER: 0054P0-92			
COLUMN   AS   CD   CR   CU   PR   HS			0.011.0			TYPE OF 8	AMPLE: SHOTHENT	CDH	PLETICA DATE:	23 OCT
SAMP # DESCRIPTION		****			,	i	4	5	6	
SAMP #   DESCRIPTION					4		6		13%	
### PROBLEM BAY CONC 0.600 0.030 3.10 2.80 2.60 40.040 1400-1 0/10/00 3a82 91.4 96.2 104.2 100.0 105.6 96.0 1060-0					CD	ER	cn	PE	на	
POR23   CREEN BAY   CONC 0.600   0.030   3.10   2.80   2.60   40.040   1400-1 0/10/00   3825   91.4   96.2   104.2   100.0   105.6   96.0   40.040   1000-1 0/10/00   1000-1 0/10/00   1000-1 0/10/00/00   1	V15551	o managa ng								
STATE   SAT   CONC   0.400   0.000	SAMP E	DESCRIPTION								
14.00-1 6/10/00   2015   01.600   0.030   0.1260269   01260266   01260266   01260266   01260266   01260266   01260269   01260269   01260269   01260266   01260266   01260266   01260269	90823	CREEN BAY	CONC	0.600	0.030		A Committee of the Comm	The second second second		-
DITECT   D		1400-1 8/10/00			The second secon				1. A. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	- 1
### PORZY CREEN BAY COMC 0,499 0.300 2.90 2.70 2.50 48.040  ##################################		UNDERFLOW			The second secon			* 0.00 C. 3 G. 0.00 C. 1		i
SPECIAL SAY   COME   0.499   0.300   2.99   0.300   2.90   0.300   2.90   0.300   0.			010	01200207			. W	HEA AUTH		5
SPEEN BAY   COMC   0.499   0.300   2.99   0.300   2.90   0.1260269   0.12602			120,00		1 0 700	1 2 00	1 2 70	1 2,50	1 <0.040	1
Second Second	90824			0.499	0.300	1 2.50	1	1	i	1
90825 CREEN BAY CONC 0.468   0.030   2.09   6.38   2.19   40.040   1501-1 8/10/00 RAIC   0.4560292   01250286   01230286   01230286   04650252   1501-2 8/10/00 RAIC   0.400   0.020   2.50   1.30   2.10   40.040   90826 CREEN BAY CONC 0.400   0.020   2.50   1.30   2.10   40.040   1505-2 8/10/00 RAIC   0.000   0.020   2.50   1.30   2.10   40.040   1505-2 8/10/00 RAIC   0.000   0.020   0.020286   01230286   01230286   04650252   1008871 CREEN BAY CONC 0.499   0.0399   3.49   6.49   2.99   40.040   1525-1 8/10/00 RAIC   0.000   01260269   01230286   01260269   01230286   01260269   01230286   0.040   1525-1 8/10/00 RAIC   0.000   0.020   0.0399   3.49   6.49   2.99   40.040   1525-1 8/10/00 RAIC   0.000   0.000   0.000   0.000   0.000   1525-1 8/10/00 RAIC   0.000   0.000   0.000   0.000   0.000   0.000   1525-1 8/10/00 RAIC   0.000   0.000   0.000   0.000   0.000   0.000   1525-1 8/10/00 RAIC   0.000   0.000   0.000   0.000   0.000   0.000   0.000   1525-1 8/10/00 RAIC   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   0.000   1525-1 8/10/00 RAIC   0.000   0					Ï.		i	L	1	1
90825 SREEN SAY CONC 0.468   0.030   2.09   6.38   2.19   40.048   1901-1 6/10/00 SREC   015 04360291   04360292   01230286   01230286   01230286   01230286   04659252   90826 GREEN RAY CONC 0.400   0.020   2.50   1.30   2.10   40.040   1505-2 6/10/00 SREC   01260269   01260269   01230286   01250286   01250286   04659252   1008871.0N		200		01260269	01260269	1		# 1 000 DOC 000 DOC 1	04650252	1
SECEN BAY					HGA AUTH	SEA AUTH	HISA AUTH	MAY WALL		
1501-1 8/10/00   SAEC   LINDERFLOW   CUP-L	93625	GREEN BAY	CONC	0.468	0.030	2.09	6.38	2.19	40.040	
OLD   04360291   04360292   01230286   01230286   01230286   04250252	,,,,,,		MEC		1	10	1			- 1
POB26   GREEN BAY   CONC   0.400   0.020   2.50   1.30   2.10   <0.040		UNDERFLOY				1 01270286	1 01230286	01230286	04650252	i
90826 GREEN BAY CONC 0.400 01260269 01230266 01260269 01230266 04650252 000026 01230266 01260269 01230266 04650252 000026 01230266 01260269 01230266 04650252 000026 01230266 04650252 000026 01230266 04650252 000026 000026 000026 000026 04650252 000026			010	04780541				HGA AUTH		
90826 GREEN BAY CONC 0.400 01260269 01230266 01260269 01230266 04650252 000026 01230266 01260269 01230266 04650252 000026 01230266 01260269 01230266 04650252 000026 01230266 04650252 000026 01230266 04650252 000026 000026 000026 000026 04650252 000026							1.4.44	1 2 10	1 40 640	1
DISTRICT   DUPL   DISTRICT   DUPL   DISTRICT   DUPL   DISTRICT   DUPL   DISTRICT   DUPL   D	90826			0.400	0.020	5.50	1.30	2.10	10.000	1
OID   01260269   01260269   01200266   01260269   01200266   012					1		1	i	1	1
90827 GREEN BAY CONC 0.499   0.0399   3.49   6.49   2.99   <0.040   1525-1 8/10/00 SREC   0.020269   0.020269   0.020266		UNDERFLOW		01260259	01260269	01230256		100000000000000000000000000000000000000	04650252	1
90827 GREEN BAY CONC 0.499 0.0399 0.0399 0.250286 0.250286 0.250286 0.250286 0.250286 0.250286 0.250286 0.250286 0.250286 0.250286 0.250286 0.250286 0.250286 0.250286 0.250286 0.250286 0.250288 0.25028 0.25028 0.25028 0.25028 0.25028 0.25028 0.25028 0.25028 0.25028 0.25028 0.25028 0.25028 0						HIA AUTH	HEA AUTH	NEA AUTH		
1525-1 8/10/00 TAREC UNDERFLOW DUPL OCD 01260269 01260269 0120286 01260289 01230286 04650252  90028 GREEK BAT CONC 0.499 0.0299 3.49 3.99 2.70 <0.040  1525-2 8/10/00 TAREC UNDERFLOW DUPL OLD 01260269 01260269 01250269 01230286 01260269 01230286 04650252  RGA AUTH RGA AUTH RGA AUTH RGA AUTH  AS Arsenic CR Chronium  CD Cadmium CR Chronium  CD Cadmium CR Chronium	DORON	CREES DAY	poer	0.499	1 0,0399	3.49	6.49	2.99	<0.040	1
DESCRIPTION   DUPL   DESCRIPTION   DESCRIP	9002				1		4	i	63	1
90828 GREEK BAT CONC 9.499   0.0299   3.49   3.99   2.70   <3.040   1525-2 8/10/00 NREC   0.0299   0.0299   0.0299   0.0299   0.0299   0.0299   0.0299   0.0290266   0.0299   0.0290266   0.0299   0.0290266   0.0					1		1 01345340	01230264	04450252	1
90028 GREEK BAY CONC 0,499   0.0299   3.49   3.99   2.70   <0.040   1525-2 8/10/00 TARE			DED	01260269		A 1000000000000000000000000000000000000	1.000		55.00	
90028 GREEK BAT COME 0.499 0.0299 3.49 1525-2 8/10/00 TREE UNDERFLON DUPL OED 01260269 01260269 01230286 01260269 01230286 04650252 0  AS Arsenic CD Codmium CR Chronium CD Copper							1.3.000	1 2 70	e2 040	4
OED 01260269 01260269 01230286 01260269 01230286 04650252 01240269 01240269 01240269 04650252 01240269 012400000000000000000000000000000000000	90020		200		0.0299	3.49	3.77	2.10	1	
OED 01260269   01260269   01230286   01260269   01230286   04600252   1  NGA ALTH NGA ALTH NGA ALTH NGA ALTH  AS Armenic CU Copper  CR Chronium					1			i	i i	i
AS Arsenic CD Codellus CD Copper CR Chronius CD Chronius CD CD Copper CR Chronius CD CD COpper CR Chronius CD CD COpper CR Chronius CD CD COpper CR Chronius CD CD CD CD CD CD CD CD CD CD CD CD CD		CADERTON			01250269	01230286	01260269	- The Control of the	04650252	1
DE Chronium Cu Copper			755	175000000000000000000000000000000000000		HGA AUTR	HSA AUTH	HGA AUTH		
CR Chronium CU Copper	40	Accepte				CO	Eadnium.			
NO MARCHES							21 A 3. C U.S			
						HQ.	Marcury			
					139					

DATE: 25 001 0 JOS FILE: 90825 ENVIRONMENTAL CHEMISTRY BRANCH - DATA REPORTING SHEET ( PAGE 2 DF 9 ) JOS ALMSER: 0054PG-92310183 RECEIPT DATE: 17 AUG G JOS DESCRIPTION: CREEN MAY - OLIN-ESTES COMPLETION DATE: 23 OCT 1 TYPE OF SAMPLE: SEDIMENT CHEM. PRESERVATIVE 3 COLUMN ..... 1 ĸ 7 ANALYTE ..... 2 HG CUI PB MG/KG..... A5 CD CB SAMP # DESCRIPTION 1.20 2.10 1 <0.040 2.30 CONC 0.399 0.020 GREEN SAY 1625-1 8/10/00 MREE UNDERFLOW DUPL 01250286 04650252 01250269 01250269 01230286 01260269 HEA ALTH STUA ADE HEA AUTH HGA AUTH <0.040 3.00 2.10 0.050 3.40 COMC 0.583 GREEN BAY 90830 1625-2 8/10/00 TREC UNDERFLOW DUPL 01230286 01260269 04650252 04360262 01230286 04360291 CID SEA AUTH HEA AUTH HGA AUTH **HEA AUTH** 40.040 2.20 5.09 0.033 3.39 90831 SREEN BAT COMC 0.529 100.0 98.0 97.6 terer 109.3 104.5 100.4 1715-1 8/10/00 4.59 <0.040 0.034 3.39 1.60 DUPL 0.569 UNDERFLOW 01230286 01260269 01230286 04650252 04360262 010 04360291 HGA AUTH HGA AUTH HGA. AUTH HEA AUTH <0.040 4.70 COAC 0.410 0.038 2.30 GREEN BAY 90825 1715-2 8/10/00 TREC UNDERFLOW DUPL. 01230286 04650252 04360291 04360262 01230286 01260269 010 HTUA AUTH HEA AUTH HGA AUTH HEA AUTH 61.3 57.0 1,27 1 58.6 0.820 GREEN BAY FEED DOMC 4.55 60422 1600-1 8/10/00 MEC DUPL 01230286 04650252 01230256 01250269 04360291 04360262 DID HIGH AUTE EGA AUTH HGA AUTH HIJA AUTH 53.5 1.35 51.2 90834 EREEN BAY FEED CONC 3.99 0.733 52.2 MREC 1505-1 8/10/00 DUPL 04650252 01250269 01230286 04360291 04360262 01230286 oto RIGH AUTH HTM ADM HGA AUTH HEA AUTH Cadmium Arsenic. AS. Copper CU CR Chronium 46 Mercury Lead PB

RIPTION: GRE RVATIVE:  COLUMN ANALYTE MG/KG  SCRIPTION EEN BAY FEED 25-1 B/10/00		1 2 AS	2 4 co		UMBER: 0054-P0-92 AMPLE: SEDIMENT 4		RECEIPT DATE: COMPLETION DATE: 6 B	
ANALYTE ME/KG SCRIPTION EEN BAY FEED	CONC	2 AS	4	5	6			
ME/KG, SCRIPTION EEN BAT FEED	CONC	AS				7	8	
SCRIPTION EEN BAY FEED	CONC		Co	C4		200	572	
EEN BAY FEED	MEC	1.0			cu	PB	HG	
	MEC	4.72						
25-1 8/10/00		1.46	0.250	15.2	1 15.9	16.6	0.378	1
	THE STATE OF		1	1	1	1	i	i
	GID	04360291	04360262	01230286	01260269	01230286		!
	410	O Table 1	HGA AUTH	RGA AUTH	HEA AUTH	NGA AUTH	04650252	- 6
EEN BAY FEED	COAC	2,93	1 0.640	1 45.5	39.8	45.1	0.900	- 1
25-1 8/10/00	MIC		1	1	1	1	T.	i
	DUPL	04360291	04360262	81270704	01240240	1.000700066		
	015	U-Juce 1	HEA AUTH	HEA AUTH	HGA AUTH	HGA AUTH	I passonesse	
EN BAY FEED	CONC	1.98	0.380	26.3	25.5	75.6	0.470	1
15-1 8/10/00	MREC		1	1		T	1	1
	1000	04340001	1 06360363	01220284	01340340	1 01220014	I SUSSESSES	
		***************************************	HGA AUTH	HOA. AUTH	HGA AUTH	HGA AUTH	04030638	- 1
THOO BLANK OT		<0.200	1 <0.020	<0.100	0.100	[ 0.100	1 <0.040	1
			1	1	10000	1	1	1
		04360291	01260269	01230286	01260269	01230286	1 04450252	- 1
	350*(-		HGA ALTH	RGA AUTH	MGA AUTH	MGA AUTH	1 *********	
01	DONO	9.50	6.99	1 22.4	1 21.8	1 11.5	1 0.072	93
			99.8	112.0	109.0	115.0	96.0	3
	DUPL	Armone	1	1	!	Taxasar	1	81
	010	04350291	FGA AUTH	HTUA ADE	90200269 HTUA ADH	HSA AUTH	04650252	
SENAL GC 01	CONC	79.1	36.8	1 16.6	j 112	1119	0.054	-1
	MREC		1	1	1	1	90.0	i
		14140004	1 61360300		1 01340340	I manner		1
	019	94390291	HEA AUTH	HGA AUTH	HGA AUTH	HGA AUTH	04650252	1
sentc				CD Cod	erium			
rontun.								
98				HG Hen	cury			
	S-1 S/10/00 HOD BLANK C1 O1 ERNAL QC D1	TEN BAY FEED CONC.  5-1 8/10/00 SEEC CUP.  010  HOD BLANK 01 CONC.  326C CUP.  010  CONC.  326C CUP.  010  ERNAL QC 01 CONC.  SEEC CUP.  010  ERNAL QC 01 CONC.  SEEC CUP.  010  SEENIC CONC.  SEEC CUP.  010	TEN BAY FEED CONC 1.98 5-1 8/10/00 MREC DUPL DID 64360291 HOD BLANK 01 CONC +0.200 MREC DUPL DID C4360291  CONC 9.50 MREC 94.5 DUPL DID C4360291  ERNAL GC 01 CONC 79.1 MREC DUPL DID D4360291	#6A AUTH  TEN BAY FEED CONC 1.98   0.380  5-1 \$/10/00	#6A AUTH HEA AUTH  TEN BAY FEED CONC 1.98   0.380   26.3  5-1 \$/10/00 \$REC   0.380   26.3  5-1 \$/10/00 \$REC   0.380   0.320286  HOA AUTH HOA AUTH HOA AUTH  HOD BLANK 01 CONC +0.200   <0.020   <0.100  \$280   0.360291   0.360289   0.1250286  HOA AUTH HOA AUTH HOA AUTH  101 CONC 9.50   4.99   22.4  \$21.0 \$21.0 \$2.5   99.6   1.12.0  \$22.0	#6A AUTH HEA AUTH HEA AUTH  TEN BAY FEED CONC 1.98   0.380   26.3   25.5  5-1 \$/10/00   SREC   0.00   0.360262   0.0230286   0.0260269   0.00   0.4360291   0.4360262   0.000   0.00   0	#6A AUTH HEA AUTH HEA AUTH HEA AUTH  TEN BAY FEED CONC 1.98   0.380   26.3   25.5   25.6    5-1 8/10/08 18FC   012 04360262   01230286   01260269   01230286    HEA AUTH HEA A	#6A AUTH HSA AUTH HSA AUTH HSA AUTH  TEN BAY FEED CONC 1.98   0.380   26.3   25.5   25.6   0.470  SEE BAY FEED CONC 1.98   0.380   26.3   25.5   25.6   0.470  SEE BAY FEED CONC 1.98   0.380   26.3   25.5   25.6   0.470  SEE BAY FEED CONC 1.98   0.380   0.1230286   0.123

JOB 111.1	: 90823							DATE:	23 oc
	market and the same					a curr , bars	5 0 0 1 *****		
		[]	WIROMMENTAL (	CHEMISTRY SHANCH	- DATA REPORTE	ed parties if have			
J08 t	ESCRIPTION: GREE	W BAY	DLIN-ESTES			MBER: 0054P0-92		RECEIPT DATE:	
CHEM. PR	RESERVATIVE				TYPE OF S	UMPLE) SECTIMENT	COM	PLETION DATE:	14- 96
	COLUMN		7	a	9	10	11 .	12	
	AMALYTE		Ø.	10	11	13	25	30	
	MG/KG		HI	SE.	AG	24	BA.	FE	
SUP #	DESCRIPTION								
SAME &	DISERTATION								
90829	GREEN BAY	COME	1.00	<0.200	0.100	4.79	3.69	1600	- !
	1625-1 8/10/00	TORREC					1	1	- 1
	UNDERFLOW	DUPL	01230286	01260269	01260269	01230286	01230266	01230286	i
			HGA AUTH	E. Torrario	HGA AUTH	* 0.000 Carees			
202601	7000000000		7.40	1 <0.200	1 <0,100	1 6.79	5.59	1 2510	1
90830	1625-2 8/10/00	TAREC	3.10	1 40.200	1 40.100	1	1	1	i
	UNDERFLON	DUPL		Parameter 1	i	Î.	1	1	1
		010	01230286	01250269	04360297	01230286	01230286	01230286	1
			HCA AUTH		HEA AUTH				
90831	GREEN BAT	CONC	3.49	<0.200	<0.100	5.99	3.19	2580	1
	1715-1 8/10/00	test	99.2	93.8	102.0	93.4	101.2	93.0	!
	UNDERFLOW		3.29	0.200	04360297	5.89	01230286	01230286	- 1
		010	HGA AUTH	04300241	HIGA ALITH	1 CHESCEN			
93832	CREEN BAY	CONC	2.80	1 <0.200	1 <0,100	1 4.80	3.80	1 1820	1
Anene	1715-2 B/10/00	TARE	2.00	1	i	i	i constant	1	1
	UNDERFLOW	DUPL		1	1	1 00000000	01230286	01230286	- 1
		010	01230286 HCA AUTH	04360291	90A AUTH	01230286	FIELDER	Latences	
		-	22.2	1 - 200	0.449	1 120	1 95.7	20600	
90833	1400-1 8/10/00	TOREC	23.7	0.799	0,440	1	I	1	i
	1400 1 05 145 64	DUPL		Barrers	i de la constante	i	Toron const	1	1
		oto	01230286	04360291	04360297	01230264	01230286	01230286	1
			HOA AUTH		HOA AUTH				
90834	CREEN BAY FEED	CONC	22.5	0.799	0.410	101	82.1	18600	- 1
200	1505-1 8/10/00	RABC		1	1	1	1		- 1
		DUPL	01230286	04360291	04360297	01230286	01230286	01230286	- 1
		010	NEW WILL	1 44300571	HTUA ADM			18	
644	2000				st s	etentum			
AG AG	Nickel Stlver					Inc			
BA	Barium				76 1	ron			
						100			

DATE: 23 DCT C JOS FILE: 90823 ENVIRONMENTAL CHEMISTRY BRANCH - DATA REPORTING SHEET ( PAGE 6 OF 9 ) JCB NUMBER: 0054PD-92310183 RECEIPT DATE: 17 AUG 1 JOE DESCRIPTION: GREEN BAY - DLIN-ESTES COMPLETION BATE: 14 SEP / TYPE OF SAMPLE: SEDIMENT CHEM. PRESERVATIVE 12: 11 10 COLUMN ..... 7 35 13 25 11 10 ANALYTE..... 9 fE BA AG 214 ME/KE,..... NI 50 SAMP # DESCRIPTION 1 30.2 6100 0.120 GREEN BAY FEED 0.240 COMC 9.18 90835 1525-1 8/10/00 MEC DUPL 01230286 01230286 01230286 01230256 04360291 04360293 010 HEA AUTH HOA MUTH 16400 1.65.9 0.370 85.3 0.540 CREEN BAY FEED CONC 15.8 90836 1625-1 8/10/00 THEC DUPL 01230286 01230286 04360295 01230286 01230286 04360291 OID HGA AUTH HEA AUTR 40.5 9810 0.200 51.4 0.340 CREEK BAY FEED CONC 11.0 90837 1715-1 8/10/00 MREC DUPL. 01230286 01230286 01230286 04360293 01230286 04360291 gep HGA AUTH HEA AUTH 2.40 +0.100 41.00 <0.100 <0.200 HETHOD BLANK 01 CONC 0.100 DUPL 01230286 01230286 01260269 01260269 01230286 019 01230286 **HCA AUTH** HGA AUTH 121 43.7 50.6 1 4.60 4.10 COMC 21.9 LCS G1 81,602 101.2 101.0 87.4 0.58 92.4 MEC 109.5 DUPL 01230286 01230286 01230286 01260269 91230286 01260259 010 HEA AUTH HEA MUTH 185 20300 281 1.40 3.90 EXTERNAL OC 01 COME 15.9 BL 903 TREC DUPL 01230286 01230286 01230286 01260269 01260269 dto 01239286 HEA AUTH HGA AUTH Selenium st Mickel HE ZX Zine Silver Iron FE Surjum

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BATE: 23 OCT (
308 FILE: 90825
ENVIRONMENTAL CHEMISTRY BRANCH - DATA REPORTING SHEET ( PAGE 7 OF 9 )
                                                                                            RECEIPT DATE: 17 AUG :
                                                          409 NUMBER: 0054FD-92310183
   JOB DESCRIPTION: GREEN BAY - OLIM-ESTES
                                                        TYPE OF SAMPLE: SECONDAT
                                                                                          COMPLETION DATE: 14 SEP 1
CHEN, PRESERVATIVES
             COLUMN ...... 13
                                         32
             MALYTE ..... 32
             MG/KG.... MN
                                                                                                               R
 SAMP # DESCRIPTION
                                        1 0,100
        GREEN BAY
                       COAL 48.8
 91823
        1600-1 E/10/00 XREC 99.0
                                        102.2
                                        0.100
        UNDERFLOW
                       DUPL 48.3
                       OED 01260269
                                        01260269
                            IIGA AUTH
                       CONC 60.5
                                         0.100
       GREEK BAT
        1400-2 8/10/00
                       WRED
                       DUPL.
        UNDERFLOM
                                         01260269
                       QED 01260269
                            HGA. AUTH
                                         41.00
        GREEN BAY
                       COMC 34.9
 90825
         1501-1 8/10/00
                       MEC
         UNDERFLON
                       DUPL
                                         01260269
                       010 01230256
                            NGA AUTH
                                         1 <1.00
                        DONG 44.9
         GREEN BAY
         1505-2 8/10/00
                        TREC
                        DUPL
         UNDERFLOW
                        010 01230286
                                         01260269
                             HIGA AUTH
                                         0.100
                        COMC 55.6
 90827
         GREEN BAY
                        MARC
         1525-1 8/10/00
                        BUPL
         UNDERFLOW
                                         01260269
                        010 01230286
                             EGA AUTH
                                         0.100
                        006C 48.5
         CREEN BAY
  90625
                        TREC
          1525-2 0/10/00
         UNDERFLOW
                        DUPL.
                        010 01230286
                                         1 01250269
                             HOA AUTH
                                                                mulybdenum
          Manganese
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109 FILE: 90823 DATE: 23 DCT ( RECEIPT DATE: 17 AUG 1 JOB NUMBER: 0054P0-92310183 JOB DESCRIPTION: GREEN BAY - DLIM-ESTES TYPE OF SAMPLE: SECUMENT COMPLETION DATE: 14 SEP ( CHEM, PRESERVATIVE: 14 33 ANALYTE ..... 32 MG/KG..... MN \* SAMP # DESCRIPTION 90829 DREEN BAY COMC 40.3 <0.100 1625-1 8/10/00 MREC UNDERFLOW DUPL 010 01230286 01260269 HEA AUTH <0.100 GREEN BAY DONG 46.6 90830 1625-2 8/10/00 MEC UNDERFLOW DUPL 01260269 010 01250286 HEA AUTR 90531 GREEN BAY COAC 51.3 <1.00 102.4 1715-1 8/10/00 TREC 101.2 41.00 DUPL 49.5 UNDERFLOW 010 01230286 01260269 HGA AUTH 1 <1.00 90832 GREEN BAY CONC 44.7 1715-2 8/10/00 MARC DUPL LMDERFLOW 000 01230286 01260269 HGA AUTH CREEN BAY FEED COME 442 1 1.30 90633 1400-1 8/10/00 MARC DUPL 010 01230286 01260269 NEA ALITE 90834 GREEN BAT FEED CONC 340 1.10 1505-1 8/10/00 TREC DUPL. 010 01210286 01250269 HOA AUTH Molybderum HO. Kanganese

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DATE: 23 DOT I
208 FILE: 90625
ENVIRONMENTAL CHEMISTRY BRANCH - DATA REPORTING SHEET ( PAGE 9 OF 9)
                                                                                           RECEIPT DATE: 17 AUG 1
                                                           JOB MUMBER: 0054P0-92310183
  JOB DESCRIPTION: GREEN BAY - OLIN-ESTES
                                                                                         COMPLETION DATE: 14 SEP 4
                                                       TYPE OF SAMPLE: SECTIMENT
CHEM. PRESERVATIVE:
            14
            WWY.YTE...... 35
                                         33
            MG/KG..... MN
                                        MO
                                                                                                              .
SAMP # DESCRIPTION
       SREEN BAY FEED CONC 137
                                       | <1.00
93835
       1525-1 8/10/00 XREC
                      DUPL
                                        01260269
                      010 01230286
                           HEA AUTH
90036
       GREEN BAY FEED
                     CONC 257
                                         <1.00
       1625-1 8/10/00
                      MREC
                      DUPL
                      010
                           01230286
                                         01250269
                           HILM ADM
                                        41.00
       GREEN BAY FEED CONC 180
90837
        1715-1 8/10/00
                      MIEC
                      OUPL.
                           01230286
                                         01260269
                      CID
                           BEA AUTS
                                        1 <1.00
       METHOD BLANK 01 COMC 40.100
                      MESC
                      BUPL
                           01230286
                                        01260269
                      010
                            HIGH MUTH
BLYDZ LES 01
                           114.0
                      MREC
                      DUPL
                      010 01230286
                                        01260269
                            HEA AUTH
                                        0.400
        EXTERNAL DC 01
                      CDMC 539
91,003
                       TREC
                       DUPL
                       010 01230286
                                         01260269
                           HGA MUTH
                                                               Mallybdenum
         Hanganese
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100 DATE: 30 AUG ( DAYLROWENTAL CHEMISTRY BRANCH - DATA REPORTING SMEET ( PAGE 1 OF 3 ) JOS MUMBER: 0054P0-92310183 RECEIPT DATE: 17 AUG ( JOB DESCRIPTION: GREEN BAY - DLIN-ESTES COMPLETION DATE: 30 AUG ( CHEM. PRESERVATIVE: TYPE OF SAMPLE: SEGIMENT ANALTIE..... 86 100 104 95 MS/KS...... 100 TVS CAS TRPH SAMP # DESCRIPTION 80 <38.0 <38.0 90838 GREEN BAT CO4C 1130 44 1400-1 8/10/00 88.5 91.9 **SMEC** UNDERFLOW DUPL 1350 010 60040240 10150235 55990239 55990242 443 90839 CREEN BAY CONC 391 1 16.0 4 1400-2 8/10/00 tonec UNDER/LOW DUPL 10150235 55990239 60040240 155990242 010 99640 GREEN BAY CONC 412 44 444.0 464.0 1505-1 8/10/00 TORIC UNDTRILLOW DUPL 55990242 Die 60040240 10150235 95990239 90641 GREEN BAY COVC 41.0 441.0 1505-2 8/10/00 MREC UNDERFLOW DUFL 60040240 10150235 55990239 55990262 010 46 21.0 4 443 90842 GREEN BAY CONC 535 1525-1 8/10/00 MREC UNDERFLOW DUPL. 60040240 55990239 55990242 CID 10150235 90843 GREEN BAY DONE 13.0 4 443 1525-2 8/10/00 MARC UNDERFLOW DUPL. 10150235 55990239 55990242 CID 60040040 Total Volatile Solids Total Organic Carbon TVS 100 040 OTI and Grease TRPH Total Recoverable Petroleum Hydrocarbons

E E H ŧ JOS FELE: 90838 DATE: 30 AUG C JOB DESCRIPTION: GREEN BAY - OLIN-ESTES 408 NUMBER: 0054PD-92310183 RECEIPT DATE: 17 AUG ( COMPLETION DATE: 30 M/G ( CHUR. PRESERVATIVE: TYPE OF SAMPLE: SEDIMENT COLUMN ...... 1 2 3 ANALTTE ..... 86 95 100 104 TVS TRPH ME/KE..... TOC 060 SAMP # DESCRIPTION BE. 464 GREEN SAY CDMC 765 44 23.0 4 1625-1 8/10/00 **TORREC** LADERFLOW DUPL 60040240 10150235 55990242 010 DOME 2570 1 44 1 10.0 / 443 90845 GREEN BAY 1625-2 8/10/00 SERVICE LAGERFLOW DUPL 10150235 55990239 55990242 010 60040248 90846 CREEN BAY DOME 850 1 46 10.0 4 441 1715-1 8/10/00 MHEE UNDERFLOW DUPL. 010 60040240 10150235 55990239 55990242 442.0 442 90847 GREEN BAY DONE 1715-2 8/10/00 MRCC UNDERFLOW DUPL 10150235 55990242 60040240 55990239 010 GREEN BAY FEED 200 160 93848 COME 58900 1600-1 8/10/98 MREC DUPL 55990239 DID 60040240 10150235 55990242 93849 CREEN BAY FEED CONC 460 370 MREC 1505-1 8/10/00 DUPL 10150235 15990239 55990242 010 60040240 Total Volatile Solids Total Organic Carbon TVS. TOC 280 Oil and Sresse TAPH Total Recoverable Petroleum Mydrocarbons

es - - 100 V . JOS FILE: 90838 BATE: 30 AUG : ENVISIONMENTAL CHUMISTRY BRANCH - DATA REPORTING SHEET ( PAGE 3 OF 3 ) RECEIPT DATE: 17 AUG 1 JOS DESCRIPTION: GREEN BAY - GLIM-ESTES JOB NUMBER: 0054PD-92310183 CHEM. PRESERVATIVE: TYPE OF SAMPLE: SEDIMENT COMPLETION DATE: 30 AUG I COLUMN...... 1 2 3 . ANALYTE..... 86 100 104 MG/KG..... 700 TVS 040 TRES SAMP # DESCRIPTION Rt GREEN BAY FEED CONC 21300 270 200 1525-1 8/10/00 XREC DUPL 10150255 35993259 019 40040240 55990242 90851 GREEN BAY FEED CONC 30400 1 46 580 230 1425-1 8/10/00 MREC DUPL 010 60040240 10150235 53990239 55990242 GREEN BAY FEED CONC 14400 1 -64 90652 1 370 280 1715-1 8/10/00 \$REC DUPL 44 10150233 00040240 55990239 55990242 010 METHOD BLANK 01 COMC 4100 BLWOT 46 1 435 1 <35 MASC DUPL OID 60040240 10150235 15990239 55990242 BLVOZ LCS 01 CONC 10300 N/A 865 902 MREC 103,0 87.1 90.5 BLPL CID 60060260 10150235 155990239 55990242 BL#03 EXTERNAL GC 01 DOMC 20500 N/A N/A N/A THEC 91.1 DUPL 000 60040240 10150235 55990239 55990242 100 Total Organic Carbon Total Volatile Solids 080 Dil and Greece Total Recoverable Petroleum Hydrocarbons TEPH

Jobfile Number: 90838
Project: GREEN BAY - OLIN-ESTES
Account Number: 0054PD-92310183
Date Received: 17 AUG 00

Job#	Sample	Tat	Analyte	+	REC	*	SDUPL	RPD	OID	
90838	90838	100	O&G	8	8.5	8	7.4	1.3	5599023	9
90838	90838	104	TRPH	93	1.9	9:	1.0	1.0	5599024	2

Page 1

END OF REPORT

100	(			CHEMISTRY BRANC	O - DATA REPORTS	ING SHEET & PANE	1 OF 4 3 ***	DATE:	
	DESCRIPTION: DA RESERVATIVE:	EEN BAY	- OLEN-ESTES			UMBER: 0054AD-9 SAMPLE: MATER		RECEIPT DATE: PLETION DATE:	17 26
	DOLUMN ANALYTE			2 138 PER-1221	3 139 PCB-1232	4 140 P08-1242	5 141 PCB-1248	6 142 PCS-1254	
SAMP #	DESCRIPTION							1	
90853	GREEN BAY 1400-1 8/10/00 GYERFLOW		<0.27 118.8	9.27	1 40.27	0.27	1 <0.27	<0.27 	
		010	54830238	54830238	54830238	54830238	54830238	54830238	
90354	GREEN RAY 1505-1 8/10/00 DVERFLOW	COME MEC DUPL	×0.24	<0.24	1 =0.24	0.28	<0.24 	40.24	
		010	54830238	54830238	34830238	54830238	54830938_	54830238	
90855	DREEN BAY 1525 8/10/00 OVERFLOW	CONC TARDO DUPL	<0.25	<0.25	<0.25 	1 0.25 4	4.5	0.25	
	4 900000000	010	54830238	54830238	54830238	54830238	54830238	54830238	
v3856	GREEN BAY 1625-1 8/10/00 OVERFLOW	CONC MREC SUPL	40.24	1 <0.26	1 <0.26	0.18 2	1 <0.24	1 40.24	
		910	54830238	54830238	54830238	54830238	54830238	54830238	
99857	GREEN BAY 1715-1 8/10/00 OVERFLOW	CONC SPEC	<0.25	40.25	4.25	1 0.22 J	0.25	<0.25	
		2000	54830238	54830238	54830238	54830238	54830238	54830238	ij
90958	GREEN BAY FEED 1400-1 8/10/00	DOME SARC DUPL	<0.24	×0.24	<0.24	0.29	10.25	<0.24 	
			54830238	54830238	54830238	54830238	54630238	54630238	1
PC8-1232	PC8-1016 PC8-1232 PC8-1248				PCB-1221 PCB PCB-1242 PCB PCB-1254 PCB	-1242			
						2			

	***************************************		ENVIRONMENTAL	CHEMISTRY BRAN	CA - DATA REPORT	ING SHEET ( PAGE	20/ 4)	DATE:	26
DIEM.	DESCRIPTION: GA	EEN BAT	r - CLIM-ESTES		201 I	MARKER: 0054PD-9		ACCEIPT DATE:	17./
	COLUMN AMALYTE.		1 137 PC8-1016	2 138	3 139	A 140	5 1	6 142	25 5
SAMP #	DESCRIPTION		104-1416	PG8-1221	PCB-1232	PC8-1242	PCB-1268	PC8-1254	
90859	SREEN BAY FEED 1505-1 8/10/00	WED	<0.23	<0.23 	40.25	1 0.27	1 <0.25	1 <0.23	1
		OLD	54830238	54830238	   54830258	   54830238	54830238	34830238	1
90860	GREEN DAY JEED 1525-1 8/10/00	DUPL	<0.20	1 40.20	07.20	1 0.27	<0.20	1 =0.20	į
			54830238	54830258	54830238	54830238	54830238 -	54830238	1
90861	SREEM BAY FEED 1625-† 8/10/00	COMC	<0.24	1 -0.26	1 <0.24	1 0.36	1 <0.24	19.24	1
			34830238	54830238	54430238	54830258 54830258	54830238	54630236	1
90862	GREEN DAY FEED 1715-1 0/10/00	DONE DREC SUPL	<0.24	1 <0.24	1 <0.24	0.41	<0.24	40.24	1
			54630238	54830238	54830238	54830238	54530238	54830738	1
BL#01	METHOD GLANE GT	CONC TARCO DUPL	<0.25	( 40.25 	1 <0.25	<0.25	4.8	<0.25 	1
			54830238	54830238	54850238	54630238	54830238	3483023s	1
BEADS	ics or	CONC SEEC		l H/A	A/A	I N/A	I N/A	II N/A	1
			54830238	54830238	54830238	54830238	54830238	5483023a	1
PEB-1232	PC8-1016 PC8-1232 PC8-1244				PCB-1221 PCB-1 PCB-1242 PCB-1 PCB-1254 PCB-1	242			

101.4	1141 90053							DATE	1 26 3
******			ENVIRONMENTAL	CHEMISIRY BRAND	W - Bata srova	tion core		٤ ) ••••••	7
	•.		SAMPLE STATE		Anta agree	1192 2068	C PAGE 4 OF	c ) ************	*******
	DESCRIPTION: SR	EEN BAS	· dr in ectes		1 122				
CHEM.	PRESERVATIVE:					SAMPLE:	0034P0-92310183 WATER	COMPLETION DATE	17 A 26 S
	GOLUMB	55555	7	8	9			X	
	PPR.		143 PEB-1266	Telaye-s	146				
		322	100 1000	TOTALL S	OCLEP				
SAMP #	DESCRIPTION								
90859	GREEN BAT FEED	COAD	<0.23	66.9%	1 47 74	200			
	1505-1 8/10/00			50.74	67.3%				
		DUPL		I Constant	i	1	1.0		
		gep	5483023#	54630238	54830238	1			
90860	GREEN BAY FEED	COVE	<0.20	65.0%	1 42 24	110			
	1525-1 8/10/00	test			67.2%				
		DUPL	2000000000	i i	1	- 1			
		010	54830238	1 54830238	54830238	1			
90061	GREEN BAY FEED	COME	<0.24	1 41.ex	1.70.8%	2.0			
	1625-1 8/10/00	tasc	0.00	1	70.04				
		OUPL.	******	1	i	1			
		GED	54830238	54850230	54830238	1			
90862	CHEEK BAT FEED	COVE	<0.24	77.23	1 69.83	4			
	1715-1 8/10/00	TREC			-	i			
			5483023a	54830238		1			
		1000		1 34033530	54830238	1			
BL#01	METHOD BLANK OT	CONC	40.25	60.5%	40.58	V			
		DREC		1	00.04	1			
		DUPL		1	Barret	1			
		OLD	54830238	\$4850258	54430238	1			
BL#02	LCS 01	CONC	0.22	70.3%	67.8%	70			
		test		1	1 57.05	1			
		DUPL	S. I. B. P. S. S. S. S. S. S. S. S. S. S. S. S. S.	1,	Language	i.			
		UND ::	54850238	1 54836538	54830238	1			
PC8-1250	PC8-1260				Tellywise . 9 v	5 A 7-1	estat con a constant	2000 CO. CO. CO. CO. CO. CO. CO. CO. CO. CO.	
DOLER	Decachlorobipher	nyl (Sur	rogate (40-14	0 HS))		d-decises.	activities at a stressed	Surregate(40-140 WS	

JobEile Number: 90853 Project: GREEN BAY - OLIN-ESTES Account Number: 0054PD-92310183 Date Received: 17 AUG 00

Job#	Sample	Tst	Analyte	* REC	* SDUPL	RPD	OID
90853 90853 90853	90853 90853	137 143 145	PCB-1016 PCB-1260 TclXYL-S DCLBP	118.8	129.2 112.0 65.5 64.7	8.4 23.1 0.2 1.1	54830238 54830238 54830238 54830238

A(1)

Page 1 END OF REPORT

. 4

ob Descripti	on: GREEN BAY - OLI	N-ESTES	Jo	b File Number: 90
	ECB Quali	ty Assurance	Corrective Actio	on Form
Analysis: Analyst	PCB A. MORROW	-		26-September-00
Problem	Instrument integrals	ed incorrectly becau	use of low responses or	concentrations.
Sample No.	amber(s) Affected:	90853-90862		-
Recomme	nded Corrective Action:	: Re-integrate m	anually	
Corrective	Action Taken By Analy	rst: Same as above	0.	
Comments	s: Re-integrated man	ually and reported v	raiues, If there are ques	nions, please call.
Date Corre	octive Action Taken: by:	26-September	eroo fuu	

	e. weyz)		ENVERORMENTAL	CHEMISTRY BRANC	H - DATA MEPORTI	NG SHEET Y PAGE	101 45 ***	BATE:	
),	L				W 1000		•		
CHEM. P	DESCRIPTION: DES RESERVATIVE:	EN EAF	- GLIN-ESTES			MAPLE: WATER		RECEIPT DATE:	21 26
	COLUMN			2	3	4	5 1	6	
	PPB		PCB-1016	138 PCB-1221	139 PC8-1232	140 PEB-1242	141 PCs-1246	142 FCB-1254	
500 #	DESCRIPTION					100	703 1240	FC3 1234	
90883	GREEN BAY	CONC	<9.25	1 +0.25	1 < 0.25	1 0.13 4	1 <0.25	Commen	
	1400-2 8/10/00	TREC	Same	1	1	1	1 40.23	<0.25	
	OVERFLOW	OLD.	54830255	54890255	54830255	1 54830255	54830255	   54830255	
90884	GREEN BAT	COAC	<0.26	1 <0.24	<0.26	[ 0.12 ]	1 <0.24	1 <0.24	
	1505-2 8/10/00 DVERFLOW	MREC		i	100000	1	1	1 19104	
	DIENTELA	DUPL	54830255	54830255	54830255	54830255	54830255	54830255	
90885	CREEN BAY	CONC	<0.25	0.25	1 <0.25	1 0.15 4	1 <0.25	1 +0.25	
	1525-2 8/10/00 OVERLIFON	THEC DUPL	84.4	1		1			
			54830255	\$4830255	54830255	54830255	54830255	54830255	
90886	GREEN BAT	0.000	<0.25	1 +0.25	4.8	0.21 J	1 <0.25	1 <0.25	
	1625-2 8/10/00 OVERFLOW	DIPL		1	1	1			
			54830255	54830255	54830255	\$4630253	54830255	34830255	
90887	CREEN BAY		«0.76	1 <0.26	+0.25	0.24 3	<4.26	1 =0.26	
	1715-2 8/10/00 OVERFLOW	DUPL.		1		1		1	
		010	54830255	54030255	54830255	54830255	54830255	54830255	
90688	GREEN BAY FEED		<0.23	<0.23	1 42.23	0.13 4	<0.23	1 +0.23	
	1400-2 8/10/00	SUPL		1			1	1	
		010	54830255	54830255	54830255	54830255	3 54830255	54830255	į
	PCB-1016				PEB-1221 PCB				
	PCB-1252 PCB-1268				PEB-1252 PCB PEB-1256 PCS				
					70.00				
						100			

198 FILE: 90575 DATE: 26 SEP ENVIRONMENTAL CHEMISTRY BRANCH - DATA REPORTING SHEET ( PAGE 2 OF 6) JOG DESCRIPTION: GREEN BAY - OLIN-ESTES JOE HUMBER: 0054PG-92310183 RECEIPT DATE: 21 AUG CHEM, PRESERVATIVE: TYPE OF SAMPLE: MATER COMPLETION DATE: 26 SEP DOLUMN ..... 1 3 AMALYTE ..... 137 138 139 140 161 142 PP8..... PCB-1016 P08-1221 PCB-1232 PC8-1242 PC8-1248 PC8-1254 SAMP # DESCRIPTION 90889 GREEN BAY FEED COMC 40.24 49.24 40.24 10.13 4 40.24 <0.24 1595-2 8/10/00 XREC DUPL 010 54830255 54830255 54830255 \$4830255 54830255 GREEN BAY FEED CONC +0.24 48.24 49,24 45.4 1 40.24 <0.24 1925-2 6/10/00 THEC DUPL 010 54830255 54830255 14831255 54430255 54830255 --54830255 90891 GREEN RAY FEED DONG 40.24 <0.26 1 40.26 0.21 4 1 <0.26 10.26 1625-2 MIC 8/10/00 DUPL. 010 54830255 54830255 54830255 54830255 54830255 54830255 90892 GREEN BAY FEED COHC <0.24 +0.24 <0.24 0.36 40.24 <0.24 1 1715-2 8/10/00 MSC DUPL 010 54830255 54830255 1 54810255 54830255 34838255 54830255 METHOD BLANE OT CONC 40.25 BLADE < 0.25 40,25 1 +0.25 1 40.25 +0.25 1 **MARC** DUP. 010 54830255 54830255 54830255 54830255 54830755 88,400 LCS DI COAC 2.37 1 W/A N/A N/A M/A W/A MEET 96.8 DUPL 00D 54830255 54830255 1 54830255 54830255 54830255 54830255 PCE-1016 PCE-1016 PCH-1221 FG8-1221 FC8-1232 PC8-1232 PCB-1242 PCB-1242 PCB-1248 PCB-1248 PCR-1254 PCB-1254

-10 -H11 95PB3 mate: 26 sei JOB DESCRIPTION: GREEN BAY - OLIN-ESTES JOB HUMBER: 0054PD-92310185 RECEIPT DATE: 21 AUG CHEM. PRESERVATIVE: TYPE OF SAMPLE: WATER COMPLETION DATE: 26 SEP COLUMN ..... 7 AMELYTE...... 143 145 166 PPR ..... PDR-1268 TOURNE-S GCLEP. SAMP # DESCRIPTION 90683 SREEN BAY COME <0.25 59.8% 67.2% 1400-2 8/10/00 TREE CVERTION DUPL 010 54830255 \$4430255 54830255 90684 GREEN BAY COME 40.24 45.6% 64.18 1505-2 4/10/00 TREC OVERFLOW DUPL 010 54430255 54830255 54830255 90685 TREEN BAY DONE +0.25 54.31 66.6% 1525-2 8/10/00 XMEC 78.8 61.9 74.9 OVERLYON DUPL Q10 54830255 54830255 54830255 90036 GREEN BAY CONC <0.25 56.82 1 63.6% 1625-2 0/10/00 MREE OVERFLOW DUPL 010 54830255 55830255 54830255 90857 GREEN BAY 65.0× 3400 53.2% 61.2% 1715-2 8/10/00 SHEE OVERPLOW DOP: 010 54830255 54830255 54830255 90858 GREEN BAY FRED COMC +0.23 56.8% 67.4% 1400-2 8/10/00 MEC DUPL 010 54830255 54831255 54830255 PC8-1260 PC8-1260 TelkYt-S 2,4,5,6-Fetrachloro-m-sylenetSurrogate(60-150 ws DCLEP RecachLorobiphenyl(Surrogate (46-140 WS))

JUS / 16.51 90885 DA1E: 26 SEF ENVIRONMENTAL CHEMISTRY BRANCH - DATA REPORTING SACET ( PAGE 4 OF 4 ) JOH DESCRIPTION: GREEN BAY - OLIN-ESTES JOB NUMBER: 0054P9-92310183 RECEIPT DATE: 21 AUG CHEM. PRESERVATIVE: TYPE OF SAMPLE: MATER COMPLETION DATE: 26 SEP COLUMN...... 7 8 ANALYTE..... 143 144 FP8..... PCB-1266 Tolavi-s DOLER SAMP # DESCRIPTION 90889 GREEN BAY FEED CONC +0.24 29.6% 56.53 1505-2 8/10/00 TAREC DUPL 010 54830255 \$4830255 54830255 90890 GREEN BAY FEED CONC +0.24 38.5% 72.5% 1525-2 8/10/00 tasc DUPL GID 54850255 54430255 54830255 90891 CREEN BAY FEED DONE 40.26 35.1% 1625-2 Seec. 8/10/00 DEPL 010 54630255 54830255 GREEN BAY FEED CONC <0.24 90892 35.6% 64.3% 1715-2 8/10/00 TREC DUP! 010 54831255 54830255 91,001 METHOD BLANK 01 DONG <0.25 64.1% 81.7% THE DUPL. 010 54830215 34830255 54830255 . . \$1,402 105 01 DONE 2.32 70.8% 74.65 18cc 92.8 DUPL 010 54830255 54830255 54830255 PCB-1260 PCB-1260 TelBBL-S 2,4,5,6-Tetrachloro-H-sylmotSurrogate(60-150 ws DCLEP Decachtorsbiphery((Surrogate (40-140 VS))

Jobfile Number: 90883

Project: GREEN BAY - OLIN-ESTES
Account Number: 0054PD-92310183

Date Received: 21 AUG 00

Job#	Sample	Tat	Analyte	* REC	* SDUPL	RPD	OID
90883		143 145	PCB-1016 PCB-1260 TclXYL-S DCLBP	78.8	82.8 74.8 68.2 68.6	6.5 5.2 9.7 8.8	54830255 54830255 54830255 54830255

Page 1

END OF REPORT

ob Description	n: GREEN BAY - OLIN-	ESTES	Jo	b File Number	908
	ECB Quality	Assurance Cor	rective Actio	on Form	,
Analysis: Analyst:	PCB A. MORROW		Date: Instrument:	28-Septembe	r-00
Problem:	Instrument integrated	I incorrectly because of	low responses or	concentrations.	
Sample Nur	mber(s) Affected:	90883-90892		*-	
Recommen	ded Corrective Action:	Re-integrate manual	Sy		
		10			
Corrective	Action Taken By Analys	t. Same as above.		<u> </u>	
Comments	: Re-integrated manu	ally and reported value	s. If there are que	estions, please cal	L
Date Corre	ective Action Taken:	28-September 00	n		

400 FILE	90593							DATE	13 HAR
***************************************		· e	NVTROMENTAL C	NUMBER BRANCH	- DATA REPORTEN	G SHEET & PAGE	1 OF 12 3 ****		******
130	× 13								
arm t	MESCREPTION: DREE	N BAY	· OLIM-ESTES		JOB NO.	MSZR: 0054P0-92		RECEIPT DATE:	
	ESERVATIVE: FNC3				TIPE OF SA	MPLE: WATER	CDM	PLETION DATE:	13. MAR
	COLUMN			2	3	4	5	6	
	ANALYTE			4	5	6	7	a	
	PP96			CD	CR	EU	PB	HG.	
SAMP #	DESCRIPTION								
		men	0.005	<0.0002	0.006	0.003	<0.001	40,80020	1
93893	SUPPLY WATER	1.77.55	126.0	93.2	90.6	5.00	97.2	94,0	1
	8/10/00 0930		0.005	<0.0002	0.035	0.003	<0.001	<0.00020	1
		gtp	01260271	01260271	01260271	01260271	01260271	04650255	1
		10000	10000010101	HEA AUTH	HGA AUTH	HEA AUTH	HGA AUTH		
90994	GREEN BAY FEED	CONC	0.004	<0.0002	0.004	0.005	<0.001	<0.00020	1
10014	1400-1 8/10/00	MEC		12	1	1		1	1
		DUPL		1	1	1		L Accessor	1
		010	01260271	01260271 HGA AUTH	01260271 BEA AUTH	01260271   HGA_AUTH	101260271 HEA AUTH	04650255	1
				nus worm			200 (DATE OF	77701000	4
90895	GREEN BAY FEED	CONC	0.004	1 <0.0002	0.005	0.003	4D.001	<0.00025	1
	1400-2 8/10/00	MEC		1		-			1
		DUPL.	01240245	01260271	01260271	91260271	01260271	04450255	î
		010	01260271	ATUA AZE	HGA AUTH	HOA AUTH	HGA. AUTH	- 1000000000000000000000000000000000000	-
anar.	2000V 844 4842	Parent.	0,004	\$2000.00	1 0.005	1 0.002	<0.001	<0.00020	1
90896	1505-1 8/10/00	TONE		10,500			1	1	1
	1969-1 at 19700	DUPL		1	Barrows	1	District	Harmon	1
			01260271	01260271	01260271	01260271	01260271	04650255	1
				HGA, AUTH	FGA AUTH	HEA AUTH	HEA AUTH		
90697	GREEN BAY FEED	CONC	0.003	40.0002	0.005	1 0.002	<0.001	40,00020	1
0.8724	1505-2 8/10/00	THEC		1	E	1	1	30	1
		CUPL		Lancas	444/0074	01340031	01360371	1 04650255	
		910	91260271	1 01260271 #GA AUTH	01260271 MGA AUTH	91260271 EGA AUTH	HGA AUTH	1 Segments	
						I n ena	1 <0.001	1 40,00020	1
90896	GREEN BAY FEED	200000	0.004	1 <0.0002	0.005	0.002		1	i
	1525-5 8/10/00	DUPL		1	1	i	1	1	
		DUPL		01260271	01269271	01260271	01260271	04650255	1
		200		HGA ALITH	HGA AUTH	HEA AUTH	HEA AUTH		
					co co	dnium			
AS	Arsenic								
AS CR	Arsenio Chronium					spec spec			

JOS FILE	90893							DATE	13 MAR
		:	NVERDMENTAL	CHEMISTRY GRANCH	DATA REPORT	ING SHEET ( PAGE	5 0t 15 3 ****		••••••
108	DESCRIPTION: GREE	YAB BE	- OLIN-ESTES			NUMBER: 0054P0-92		RECEIPT DATE:	
CHEM, P	RESERVATIVE: HND	5			TANE OF	SAMPLE: WATER	COA	PLETION DATE:	13 HAR
	DOLUMN		1	2	3	4	5	6	
	ANALYTE		2	4	3	6	7.	8	
	PPM		AS	co .	CR	DJ.	PB	на	
SAMP #	DESCRIPTION								
00000		enter.	0.000	1 <0.0002	0.005	1 0.003	1 40,001	<0.00020	- 1
93899	1525-2 B/10/00	TREC	0.036	1 40.0002	0.000	1	1	1	î
		DUPL		A. Saran	Lancas a	i.	1	1	1
		010	01260271	01260271	EGA AUTE	1 01260271 HEA AUTH	HEA AUTH	04650255	1
				HSA AUTH	HUN MUTE	THE COLUM			
90900	GREEN BAY FEED		0.004	<0.0002	0.004	1 0.002	1 40,001	<0.00020	1
	1625+1 8/10/00	TAREC		4	Į.		1		- 1
		DUPL	01260271	01260271	01250271	01260271	01250271	04650255	i
				HEA AUTH	HGA MUTH	HEA AUTH	HGA AUTH		
90931	GREEN BAY FEED	rreer	0.004	1 <0.0002	1 0.004	1 0.003	<0.001	48,00030	- 1
90901	1625-2 8/10/00	TREE	126.2	93.0	92.6	84.4	96.2	0.88	î
		DUPL	0.004	<0.0002	0.004	0.003	<0.001	+0.00020	. !
		010	01260271	01260271   EGA AUTE	HSA AUTH	HQA AUTH	101260271 HGA AUTH	04450255	11
90912	GREEN BAT FEED	CONC	0.004	40.0002	1 0.004	1 0,002	40.001	<0.00020	- 11
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	1715-1 8/10/00	MREC		1	12220	i	i	i	1
		DUPL	017/0771	1	01260271	01260271	01250271	04650255	. 74
		010	01260271	01260271 HGA_AUTH	HEA ALITH	HILA AUTH	HSA AUTH	1000000 A	
W2903	CREEK BAY FEED	CONG	0.004	1 <0.0002	0.005	0.003	1 40,001	40.00030	- 1
10100	1715-2 8/10/00	MAEC		i	i	1	1	1	1
		DUPL			64340223	01260271	01260271	04650255	- 1
		GED	01286271	NGA AUTH	1 01260271 1GA AUT#	HEA AUTH	HEA AUTE	1 04000200	
93904	CREEN BAY	man	0,004	1 <0.0002	0.005	500.0	1 <0.001	1 <0.00020	1
74504	1400-1 B/10/00	REEC	21000	1	1	i	1	i	1
	OVERLIFOM	DUPL		1			1 00000000	04650255	- 1
		010	01250271	101260271 HIA AUTH	01260271 HGA AUTH	85A AUT 8	1 01260271 HDA AUTH	1 04006533	
					m .	-t-t-			
AB CB	Arsenic Chronium					adelun Opper			
PB.	Lead					encury			

DATE: 13 MAR. JOB FILE: 90893 ENVIRONMENTAL CHEMISTRY BRANCH - DATA REPORTING SHEET ( PAGE 3 OF 12 ) JOB NUMBER: 0054PD-92310183 RECEIPT DATE: 21 AUG JOS DESCRIPTION: GREEN BAY - OLIN-ESTES TYPE OF SAMPLE: WATER COMPLETION DATE: 13 HAR CHEM. PRESERVATIVE: MICH 4 6 DOLUMN ..... 1 ANALYTE ..... 2 94 86 PPM..... AS 00 CR CU SAMP # DESCRIPTION <0.001 <0.00020 9.002 40.0002 0.005 90905 GREEN BAY DOME 0.004 1400-2 8/10/00 SOREC OVERFLOW DUPL 01260271 01260271 04650255 OLD 01260271 01250271 01260271 HGA AUTH HGA AUTH HEA AUTH <0.00020 <0.0002 0.005 0,002 40,001 GREEN BAY COMC 0.005 90905 1505-1 8/10/00 TREC DVERFLOW DUPL 01260271 01260271 01260271 01260271 04650255 01260271 010 HIGH AUTH FGA MITH HGA AUTH HOA AUTH <0.00020 0.002 +0.001 0.005 90907 GREEN BAT DONC 0.004 <0.0007 1505-2 8/10/00 1880 CVERTLOW. DUPL 01260271 01260271 04650255 01260275 010 01260271 01260271 HGA AUTH HEA AUTH HGA AUTH HIGH WUTH CONC <0.0002 0.006 0.002 1 40,001 <0.00020 90908 GREEN BAY 1525-1 8/10/00 MREC OVERTLOW DUPL 010 01260271 01260271 01260271 01260271 01260271 04650255 HGA. WUTH HEA AUTH **HEA AUTH** HGA AUTH 0.002 <0.001 <0.00020 <0.0002 0.005 CREEN BAY COME D. COS 90909 91.8 90.0 1525-2 B/10/00 TREC 126.6 95.2 1 95.4 85.6 <0.001 DUPL 0.003 +0,0002 0.005 0.002 <0.00020 DVERFLOW 01260271 01260271 01250271 04650255 01250271 010 01260271 HGA AUTH HEA AUTH REA AUTH HSA AUTH <0.001 40.00020 90910 GREEN BAY DOME 0.804 <0.0002 0.006 0.003 MARC 1625-1 8/10/00 OVERFLOW DUPL 04650255 01269271 010 01266271 01250271 01260271 01260277 HSA AUTH REA AUTR HGA MUCH HOA AUTH Codmiun CO Arsenic 48 CR Chronium CU Copper Nercury Lead

J09	DESCRIPTION: GREE	EN BAT	- OLIV-ESTES		21. 2	DB MUMBER:	005400-92	2310183	RECEIPT DATE:	21 AU
CHEM. P	RESERVATIVE: HNO	3			TYPE	OF SAMPLE:	WATER		COMPLETION DATE:	
	COLUMN		1	5	3	4		5	6	
	MALYTE			4	5	6		7	20	
	PPM		AS	Cb	DR .	cu		PG	HG	
SAMP #	DESCRIPTION									
90911	GREEN BAY		0.005	1 <0.0002	[ 0.007	10.	002	100,001	<0.00020	T
	1625-2 8/10/00	XXIC		1	1	1		1	1	- 1
	DVERFLOW	DUPL		Faurance	Market 1	9 1/3	200000	Vanista 20	10 0.55550	- 1
		oto	01260271	01260271	0126027		260271	01260271	04650255	- 1
				HGA AUTH	FGA AUT	. 190	A AUTE	PGA AUTH		
90912	SPEEN BAY	CONC	0.004	<0.0002	0.006	10.	500	<0.001	<0.00020	1
	1715-1 8/10/00	MARKE		1	1	i		1	1	- î
	OVERFLOW	DUPL		T.	House	. 1		Discourse	1	1
		010	01260271	01260271	0126027	0	290271	01260271	04650255	1
				EGA AUTH	46A AUT	н на	A AUTH	HEA AUTH		
90913	GREEN BAY	CONC	0.004	<0.0002	1 0.005	1.07	200	<0.001	1 <0.00020	1
	1715-2 8/10/00	TREC		1	Of Commercial	i			1	i
	OVERFLOW	DUPL		1	91	1		Ü	1	i
		010	01260271	01260271	0126027	20 7 88	260271	01260271	04650255	- 1
				NGA AUTH	HOA AUS	н но	HTUA A	HEA AUTH		
SL#31	METHOD BLANC 01	CONC	+0.002	<0.000Z	<0.001	<0	.001	<0.001	<0.00020	1
		MEC		1	A COLOR	1			1	1
		DLPL		1	S1	1		F	1	1
		000	01260271	01260271	0126027	2.	260271	01260271	04650255	1
				HSA AUTH	HGA, AUT	* *5	HTUA A	HGA WUTH		
81,402	LCS D1	COMC	0.050	0.0518	1 0,052	10.	048	0.050	1 0.000765	1
		MACC	100.0	105.6	1 103.2	1 96	,4	100.6	102.0	- 1
		DUPL.		1	1	- 1			4.5	1
		GID	01260271	01260271	0126027		260271	01260271	04650255	1
				HEA AUTH	HOA AUT	e HS	HTUA A	HOA AUTH		
NL #03	EXTERNAL OC G1	CONC	0.428	0.174	0.522	1 0.5	086	0.619	0.000624	T
		DREC	110.3	164.2	105.9	1 99	.5	102.3	104.5	- 1
		DUFL		1	Constitution of	1 1			Marian was	1
		910	01260271	01260271 HGA AUTH	1 0126027 HGA AUT	10 18 700	260271 A AUTR	01260271 MGA AUTH	04850255	1
							00000			
AS	Arsenic				CD	Dedrif Lin				
CR PB	Chronium Lead				60 45	Dopper Mercury				

JOB FILE	: 90893							DATE	13 MAR
		**** [4	NTECHNENTAL	DIENISTRY BRANC	N - DATA REPORT	THE SHEET (	PAGE 5 OF 12 )		
	****		Processor .			1			
205.0	ESCRIPTION: GREE	N BAT -	OLIN-ESTES			NUMBER: 005		RECEIPT DATÉ:	
	ESERVATIVE: H403				TYPE OF	SAMPLE: MAT	SR	COMPLETION DATE:	15 FAR
	COLUMN		7		9	10	11	12	
	ANALYTE		9	10	11	13 ZN	25 BA	50 FE	
	PPH		wit .	SE	AS		30000		
SAMP #	DESCRIPTION								
90893	GREEN BAY	CONC	0.014	0.002	1 40.001	0.046	0.108	0.000	1
Parents.	SUPPLY MATER	WEE		1 131.0	81.8	83.0	96.4	8.6	1
	8/10/00 0930	DUPL	0.014	0.002	<0.001	0.045	71   0.107	0.077	1
		010	01250271 HGA AUTH	01260271	#GA AUT#	1 416904	. I commercial	1	
9000				0.002	1 40,001	0.095	0.302	0.047	1
90894	1400-1 8/10/00	TREE	0.009	0.002	1	1		1	1
	into-1 di lujud	DUPL		ESTATES.	Horse consum	l Serve	. 1	Laurent	1
		010	01260271	01250271	01260271	1 01260	271   01230269	01260271	1
			HGA AUTH		HEA AUTH		100000	700000	70
90895	GREEN BAY FEED	DONG	0,010	0.003	<0,001	0.071	0.264	0.083	
	1430-2 8/10/00	TREC				1		î	1
		DUPL DID	01260271	01260271	01260271	01260	271   01230260	01260271	1
			SEA AUTH	*(3)(2)(5)	HSA AUTH	Will state of			
90896	GREEN BAY FEED	DONE	0.009	0.002	1 40.001	0.042	0.185	0.073	!
	1505-1 8/10/00	THEC		1	1	1		1	
		DUPL.	01946271	01260271	01260271	01260	271 0123026	01260271	i
		010	WSA AUTH	- Carrett	HGA, AUTH		-		
90897	GREEN BAT FEED	0045	0.010	9,002	40.001	0.050	0.205	0.407	1
POUR!	1505-2 8/10/00	MEL	30.00000	i	1	1		1	1
		DUPL	ashirte.	04540271	01360271	01260	271 0123026	9   81265271	i
		GED	HGA AUTH	01260271	HGA AUT#		1,000		
045.55	2000 THE TOTAL	proce.	0,010	1 0.002	<0.001	1 0.045	0,194	0.055	1
89839	1525-2 8/10/00	TONE			1	1	1	1	1
	44.46	DUPL		1	1	1	1271   0123026	e   01268271	- 1
		010	01260271 HGA AUTH	01260271	#GA AUT#	1000	1 0123000	, I ditoeti	4
	502000 LI				SE.	Selenium			
MI	Mickel				ZN	Zine			
AG BA	Barium				FE	tron			

	E: 90893	····· g	NVIRONMENTAL C	MEMISTRY BRANCH	- DATA REPOR	TING SHEET ( PAGE	6 OF 12 ) *		15 994
		-0							
2000	DESCRIPTION: GREE RESERVATIVE: HWO!		- OLIM-ESTES			NUMBER: 0054PO-92 SAMPLE: WATER		RECEIPT DATE: COMPLETION DATE:	
	COLUMN		7	8	9	10	11	12	
	ANALYTE			10	11	13	25	30	
	PPM		MT .	SE	AG	7.9	BA	16	
SAMP #	DESCRIPTION								
90899	GREEN BAY FEED	CONC	0,010	0.002	1 <0.001	1 0,036	0.168	0,625	T.
	1525-2 8/10/00	TREC		i	1	i	18	1	i
		DUPL		L	1 Inserted	1	No reconstru	4	1
		GIÞ	17508510 HTUA ADH	01260271	01260271 HGA AUTH	01260271	01230269	01260271	1
90900	GREEN BAY FEED	DONG	0.009	0.002	1 <0.001	1 0.022	0.127	10.021	1
-21-00	1625-1 8/10/00	THEC		1	1	1	1	1	1
		DUPL		1	1	1	1	1	1
		GED	01260271 HEA AUTH	01260271	HGA AUTH	01260271	01230269	01260271	1
90901	GREEN BAY FEED	COMC	0.009	0.002	[ <0.001	1 0.019	0.111	<0.020	1
1000	1625-2 8/10/00		86.4	131.4	04.6	82.4	96.8	1116.0	i
		DUPL	0.009	0.002	<0.001	0.018	0.116	<0,0020	1
		010	01260271 HGA AUT#	01260271	HGA AUTH	01260271	01230269	01260271	T
90902	SKEEN BAY FEED	3.37.5	0.010	0.002	<0.001	0.024	0.141	1 0.032	1
	1715-1 8/10/00	1960		1					1
		DUPL	01260271	01260271	01260271	01260271	01230209	01260271	- 1
		010	RGA AUTH	1 Automot 1	HGA AUTH	STEWER	1 4 14341.07	1 America	
90903	CREEN BAY FEED	CONC	0.010	1 0.002	1 40,001	0.022	0.133	0.033	1
	1715-2 8/10/00	MIEC		1	1	1	1		1
		DUPL			- Participant		24375345	1 00000000	1
		010	HOA AUTH	01260271	85A AUTH	01260271	01230269	1 01280271	1
90904	GREEN BAY	CONC	0.009	0.002	+0.001	0.062	0.246	0.111	1
	1400-1 8/10/00	MREE		1	13	1	1	1	1
	DVERLEDN	DUPL	0.01000				64370346	84340324	1
		ate	01260271 HGA AUTH	01260271	80A AUTR	01265271	01230269	01260271	1
*1	Nickei					Selenium			
WI AG BA	Mickel Silver Sarium				28	Selenium Zinc Lron			

DATE: 33 MAR ams Fitte: 90893 JOB NUMBER: 0054PD-92310183 RECEIPT DATE: 21 AUG. JOB DESCRIPTION: GREEN WAY - CLIN-ESTES CHEM, PRESERVATIVE: HMGS TYPE OF SAMPLE: WATER COMPLETION DATE: 13 MAR. 12 COLUMN...... 7 10 11 a 13 30 AMALYTE..... 9 10 11 40 ZM EA. FE PPH...... NI SE SAMP # DESCRIPTION +0.001 0.077 0.263 0.053 0.002 90905 CREEN BAY COMC 0.008 1400-2 8/10/00 THEC DVITRALON DUPL 01260271 01230269 01260271 01260271 000 01260271 01260271 HGA AUTH 0.041 0.024 YAR MIISE CONC 0.009 0.002 40.001 0.180 tage 1505-1 8/10/00 OVERFLOW DUML 01250271 01260271 01260271 01260271 01230269 01260271 010 HOA AUTH HEA AUTH 0.046 0.197 0.153 1 0.002 < 0.001 90907 SREEN BAY COMC 0.009 1505-2 B/10/00 TREC OVERFLOW DUPL 01260271 01260271 01260271 01230269 01260271 010 01260271 HOA AUCH HGA MUTH 0.034 90908 GREEN BAT CONC 9.010 0,002 #G.001 0.047 0.186 1525-1 8/10/00 TREC DVERFLOW DUPL 010 01260271 01260271 01260271 01260271 01230269 01260271 HGA. AUTH HIGH AUTH 0.009 0.002 <0.001 0.042 0.193 0.130 90939 GREEN BAY DONE 96.4 98.6 81.2 129.2 1525-2 8/10/00 TREE 88.8 8.7 0.193 DATELLON DUPL 0.009 0.002 \*U.001 0.043 0.135 01260271 01260271 01250271 01230269 01260271 01260271 010 HGA. AUTH HEA. AUTH 0.021 0.121 0.033 0.010 0.002 1 <0.001 90910 GREEN BAY CONC 1625-1 8/10/00 TOREC OVERFLOW DUPL 01260271 01230269 01260271 dip 01260271 01260271 01260271 NGA AUTH **WEA AUTH** Selenium Mickel. 11 Zinc 28 AG Silver Barium FE 1 ron BA

409 FIL	: 90693							DATE:	15 MA
		:	NVIRONMENTAL C	HEMISTRY BRANCH	- DATA REPOR	ITING SHEET ( PAGE	8 UF 12 3 ***	••••••	•••••
100 1	DESCRIPTION: GREE	N BAY	OLIN-ESTES		400	NUMBER: 0054PD-5	2310183	RECEIPT DATE:	21 AU
	RESERVATIVE: MICE				TYPE OF	SAMPLE: WATER	00	MPLETION DATE:	15 MA
+			2	100		10	11	12	
	ANALYTE			a 10	11	13	25	30	
	1998			SE	86	24	8A	FE	
SAMP #	DESCRIPTION								
90911	GREEN BAY	conc	0.010	0.002	1 <0.001	0.019	0.123	0.025	1
Passi	1625-2 8/10/00	10REC	2000		1	i	1	1	1
	OVERFLOW	DUPL		1000000	1	1	1	1 61340371	
		010	01260271	01260271	01260271   HGA AUCH	01260271	01230269	01260271	
			NTUA ADN		man man m				
90912	GREEN BAY	CONC	0.010	0.002	<0.001	0.022	0.134	1 <0.020	
	1715-1 8/10/00	MIL		!	4	1	1	1	- !
	OVERFLOW	DUPL	01260271	01260271	01260271	01260271	01230269	01260271	i
			HIGH AUTH	100000	HEA AUTH		100		0
							1 4 494	1 -4 000	- 7
90913	CREEN BAY		0.009	0.002	40,001	0.019	0.126	1 <0.020	- 1
	1715-2 8/10/00 OVERFLOW	DUPL.		i	1	i	10	i	i
		000	01260271	01260271	01260271	01260271	01230269	01260271	1
			HEA AUTH		KGA AUTH				
81401	HETHOD BLANC OT	cove	<0.001	1 <0.002	1 40.001	1 <0.010	+0.001	1 <0.020	1
80401	recinic beneat of	TABLE		1	3		į	1	1
		DUPL		1	1		*********		1
		010	01260271 8GA AUTH	01260271	01260271   HGA AUT H	01260271	01230269	01260271	
			NOW AND IN		. rues marr				
81435	LCS OT		0.050	0.051	0.050	0.050	0.048	1.94	1
			100.0	101.0	100.6	99.2	95.8	97.0	- 1
		DUPL	01260271	01250271	01260271	01260271	01230269	01260271	i
		-	HGA AUTH	***************************************	HEA ALTH		501070100	175000000000000000000000000000000000000	
		100000		* * * *	1.4.000	1.0.00	1.0.766	1.27	- 7
BL#03	EXTERNAL QC G1		102.0	103.4	0.526	1.27	95.8	102.4	- 1
		DUPL	101.0	102.4	1	1	1	1	- 1
		010	01260271	01260271	01260271		01230269	01260271	1
			HGA AUTH		HOA AUTH				
MI	Nicket				SE	Selenium			
AG.	Silver				ZN	Zinc			
HA	Barium.				FE	Tron			

	L NOTE OF							3000	
	1 90895								13 HAR
********		····· [	MATERIAN DELIVER	DIEMISTRY BRANCE	- DATA REPOR	TING SHEE	ET ( PAGE 9 OF 1	2 )	
						- Company			
	ESERVATIVE: HWO		- OLIN-ESTES			SAMPLE:	0034P0-92310183 WATER	RECEIPT DATE: COMPLETION DATE:	
CHECKS FOR									
	CDLUMM			34	15				
	ANALYTE			32 MN	HO				
attent at									
SAMP #	DESCRIPTION								
90893	CREEN BAY		75.6	3.03	<0.001	1			
	SUPPLY WATER		94.8	96.2	1 106.0	4			
	8/10/00 0930		76.1 91230269	3.05	0.001	1			
		010	-1020007		15000				
90694	GREEN BAY FEED	CONC	77.1	1.40	0.005	1			
	1409-1 8/10/00	THEC		1	4	1			
		DUPL	01230269	01230269	01260271	- 1			
		Ocp	DIEBUSER	1 01230204	T elescert	3			
90095	GREEN BAY FEED	COMC	74.9	1 1.40	0.005	1			
10004	1400-2 8/10/00	THEC		I	1	1			
		DUPL.	01230269	01230269	01260271	1			
		010	01239609	Lauracas	1 GIEGGET	1			
90896	GREEN MAY FEED	COME	77.1	1.83	0.003	1			
	1505-1 8/10/00	TAKEC		1	1	i			
		DUPL	01230269	01230269	01260271	- 1			
		010		1.50000000	101000000000000000000000000000000000000				
90897	GREEN BAY FEED	COST	76.0	1.89	0.003	1			
2.50	1505-2 B/10/00	TOMEC		1	31	1			
		DUPL.	********	01230269	01260271	1			
		010	01230269	01230259	Lateacert	2.			
90898	GREEN BAY FEED	CONC	76.2	1.54	9.002	3.			
	1525-2 8/10/00			1	1	- 4			
		DUPL			01260271	1			
		ete	01230269	01230269	01250271	,			
	Magnes i un				194	Pumpanes	e		
#G	magnes run								

DATE: 13 HAR I JOS FILE: 90893 JOB DESCRIPTION: GREEN DAY - CLIN-ESTES JOB MUMBER: 0054P0-92310183 RECEIPT DATE: 21 AUG I COMPLETION DATE: 13 MAR : TYPE OF SAMPLE: WATER CHEM, PRESERVATIVE: HHOS COLUMN...... 13 ANALYTE ..... 31 33 PPM..... MG HN HO SAMP # DESCRIPTION 1 1.97 0.002 GREEN BAY FEED CONC 77.9 90899 1525-2 8/10/00 WEC DIPL 01230269 01260271 010 01230269 0.003 GREEN BAY FEED CONC 77.3 1.59 1625-1 8/10/00 MEC DUPL 010 01230269 01230269 01260271 0.003 GREEN BAY FEED CONC 77.3 1 1,30 90901 1625-2 8/10/00 TREC 94.4 96.2 108.0 **DUPL 76.9** 1,29 0.003 01230269 01260271 OED 01230269 0.002 90962 GREEN BAY FEED COMC 75.7 1 1.41 1715-1 B/10/00 THEC DUP'S 01260271 010 01230269 01230269 92903 GREEN BAT FEED CONC 78.0 0.002 1715-2 8/10/00 WEEC DUPL 010 01230269 01230269 01260271 0.005 90904 GREEN BAY DUNC 78.6 1 1,72 1400-1 8/10/00 THEC OVERLYON DURL DED 01230269 01230269 01260271 Pagnes fun Mangenese MS Hollybdenum

JOB #1LE: 90893 DATE: 13 MAR JOB NUMBER: 0054PD-92310183 RECEIPT DATE: 25 AUG JOS DESCRIPTION: GREEN BAY - OLIN-ESTES CREM. PRESERVATIVE: HN03 TYPE OF SAMPLE: WATER COMPLETION GATE: 15 MAR. 15 AMALYTE..... 31 32 33 PPM..... NG MD SAMP # DESCRIPTION ٠ 1.60 0.006 90905 GREEN BAY CONC 78.1 1400-2 8/10/00 TORRE OVERFLOW DUPL 010 01230269 01230269 01250271 GREEN BAY CONC 78.5 1.31 0.003 1505-1 8/10/00 TREE **CVERFLOW** DUPL 01230269 01230269 01260271 010 0.003 GREEN BAY CONC 78.9 1.81 90907 1505-2 8/10/00 TOREC OVERFLOW DUPL 01260271 DID 01230269 01230259 90908 GREEN BAY CONC 78.9 1.75 500.0 1525-1 /1/10/00 MREC OVERFLOW DUPL DID 01230269 01230269 01280271 1.83 \$00.00 90909 GREEN BAY CONC 78.9 110.0 1525-2 8/10/00 MREC 92.4 95.8 OVERFLOW DUPL 79.2 1.84 500.0 01230269 01260271 01230269 010 90910 GREEN BAY DONG 77.5 1 1.59 0.003 1625-1 8/10/00 TOREC OVERFLOW DUPL 010 01230269 01230269 01260271 Magnesium Manganese MG MO Mail ybdenum

COLUMN	M BAY -	OLIM-ESTES		JOS TYPE OF		0054PD-92310183	RECEIPT DATE:	21 AUG
COLUMN	M BAY -	OLIM-ESTES		JOS TYPE OF	NUMBER:	0054PD-92310183	RECEIPT DATE:	21 AUG
COLUMN AMALYTE POM		13		TYPE OF				
COLUMS			14		SAMPLE:	MATER	COMPLETION DATE:	13 MAR
AMALYTE			14	7.2				
AMALYTE			1.7	15				
PPM		196.0	32	33				
ESCRIPTION		MG	H4	MD				
								9
REEN BAY	CDNC	77.6	1 1.63	0.003	T			
625-2 8/10/00	TREC	S\$255	1000	1	1			
WERPLOW	DUPL		1	4-02-00	1			
	010	01230269	01230269	01260271	1			
REEN BAY	CONC	76.7	1.31	0.003	1			
715-1 8/10/00	MEC		1	1	1			
OVERFLOW	DUPL	*********	1 0177777		1			
	OLD	01520504	I 015205PA	1 AISSESTI	1			
SREEN BAY	COMC	77.9	1.38	0.003	1			
			Ţ	1	1			
OVERFLOW		01238269	01230269	01260271	i			
METHOD BLANK OF	CONC	<0.100	<0.001	<0.021	1			
	TAREC		1	1	- 1			
	DUPL	01270240	01220269	1 01261271				
	GIO.	U SAUSOY.	1 Ultastor	a rease.	- 1			
cs 61	COMC	4.70	1 0.480	0.051	1			
0.0000000000000000000000000000000000000			96.0	102.2	1			
	5UPL 610	91230269	01230269	01260271	1			
EXTERNAL GC 01	COAC	34.6	0.566	0.565	- 13			
			99.1	103.6	1			
			01520540	01260271	- 1			
Boones Lur				MN	Hanganer	se		
MoLybderum								
֡֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜	PAGENTAL OF OT PAGENTAL OF OT PAGENTAL OF OT PAGENTAL OF OT PAGENTAL OF OT PAGENTAL OF OT PAGENTAL OF OT PAGENTAL OF OT PAGENTAL OF OT PAGENTAL OF OT PAGENTAL OF OT PAGENTAL OF OT PAGENTAL OF OT PAGENTAL OF OT PAGENTAL OF OT	REEN BAY CONC 1715-1 8/10/00 NEC 1715-1 8/10/00 NEC 1715-2 8/10/00 NEC	### CONC 76.7  ##################################	DIO 01230269   01230	010 01230269   01230269   01260271	010 01230269   01250271	CONC 76.7   1.31   0.003	DISCUSS   DISCUSS   DISCUSS   DISCUSS

306 1176	: 99914				1	yough		DATE:	03 OCT
		**** 7	WIRONAENTAL (	HUMISTRY BRANCH	- DATA REPORTING	SHEET APAGE	Cas 6 3		
		1000100	M			(A)	p.		
	ESCRIPTION: GREE ESCRIVATIVE:	N BAY	- OLIV-ESTES			MSER: 0054PD-923 MPLE: SEDIMENT	.00.1001	RECEIFT DATÉ: PLETION DATÉ:	
	COLUMN		1	2	3	4	5	4	
	WHAT ALE			138	139 PC8-1232	140 PCB-1242	141 PCB-1248	162 FCB-1256	
	UQ/K6	****	PC8-1016	PCB-1221	Page state	7.00 11.00			
SAP #	DESCRIPTION								
90914	GREEN BAY	CONC	<18.0	1 <18.0	1 <18.0	3824	1418.0	<18.0	1
33334	1400-1 8/10/00		99.6	1	i		1	1	
	OVERFLOW	010	54830255	54830255	54830255	54830255	1 54830255	54830253	i
92915	CREEN BAY	COMC	<20.3	1 <20.3	<20.3	4376	<20.5	<20.3	1
*****	1505-1 8/10/00	XREC		10	1	1			- !
	OVERFLOW	DUPL 010	54830255	54830255	54830255	54830255	54830255	54830255	1.
90916	GREEN BAY	CONC	<18.0	<t8.0< td=""><td>[ &lt;18.0</td><td>3859</td><td>  &lt;18.0</td><td>  418.0</td><td>1</td></t8.0<>	[ <18.0	3859	<18.0	418.0	1
	1525-1 8/10/00	Mec			İ	1		1	1
	OVERFLOW	010 010	54830295	54830253	54830255	54830255	54830255	54830255	î
90917	GREEN BAY	CONC	<22.9	<22.9	<22.9	4719 /	<22.9	1 <22.9	Ţ
	1625-1 8/10/00	MAEC				1		1	1
	OVERFLOW	OID	54830255	54830255	54830255	54830255	56850255	54830255	1
90918	GREEN BAY	CONC	4.05>	1 <20.6	1 <20.6	1 4482 /	4,05>	<20.6	E
	1715-1 8/10/00	MREC		1				1	- 1
	OVERPLON	DUPL	54830255	54830255	54830255	54830255	54850255	54830255	1
90919	GREEN SAY	DOMO	<19.0	<19.0	1 <19.0	1 3823 /	1 <19.0	+19.0	!
	1400-2 8/10/00	THEC		1	1	1			ŧ
	OVERFLOW	010	54830235	54630259	54830255	54830255	54830255	54830255	i
PC#-101	16 PCB-1016				PC8-1221 PC	n-1221			
	32 PCB-1252				PCB-1254 PC				
ACR. 15	48 PCS-1246			4			ye conf		40.0
				***		0.00	X P	,	
						/	not cur	/	
							MX /		
							10		
							200		

CREPTION: GREE ERVATEVE:  COLUMN AMALYTE UG/CG ESCREPTEON REEN BAF	H BAT	- OLIS-ESTES 1 137	2 138 PCB-1221	JOB NU	G SHEET ( PAGE MHER: 0054PD-92 MPLE: SEDIMENT	510183	RECEIPT GATE: PLETION GATE:	21 AUG
ERVATIVE:  COLUMN AMALYTE UG/CG  ESCRIPTION  REEN BAF S05-2 8/10/00	CONC	1 137	138	TYPE OF SA	MPLE: SEDIMENT			200000
EDLUM  AMALYTE  UG/CG  ESCRIPTION  REEN BAF  505-2 8/10/00	CONC	137	138		4			
ESCRIPTION REEN BAY 505-2 8/10/00	CONC NRSC			PCB-1232	140 PCB-1242	5 161 PG8-1248	6 142 PCB-1254	
505-2 8/10/00	MREC							
VERFLOW	DIBL	<20.4	<20.4	1 <20.6	4659	<20.4	<20.4	1
	010	54830255	54830255	54830255	56830255	54830255	54830255	i
REEN BAT 525-2 8/10/00	CONC	<16.7	1 <16.7	<16.7	1 3256 /	<16.7	1 <16.7	1
VERFLOW	DUPL DED	54830255	54830255	54830255	   54830255	54630255	54830255	1
RCSW BAY 625-2 8/10/00	XHEC	<21.5	<21.5 	<21.5 	1 6263 /	<21.5 	<21.5	!
WERFLOW		54830255	54830255	54630255	\$4830255	54830255	54830255	ì
REEN BAY 715-2 8/10/00	TREC	<16.1	<16.1 	<16.1	1 3138 /	<16,1	<16.1	!
VERFLOW		54830255	54830255	54830253	54830255	54830255	54830255	i
REEN BAT FEED 400-1 8/10/00	WHEE	<18.4	1 418.4	<18.4	3146	1 <18.4	<15.4	1
		54530255	54830255	54830255	54830255	54830255	54830255	î
	SMEC		<15.5 	<15.5 	2933	<15.5 	<15.5	1
		54830255	54830295	54830255	54830255	54830255	54830255	i
PCB-1016 PCB-1232 PCB-1248				PC8-1252 PC	1-1242			
	REEN BAY 625-2 B/10/00 REEN BAY 715-2 B/10/00 REEN BAY FEED 400-1 B/10/00 REEN BAY FEED 505-2 B/10/00 PCB-1016 PCB-1232	REEN BAY COMC SHECK OUPL GID  REEN BAY COMC SHECK OUPL GID  REEN BAY FEED COMC SHECK OUPL GID  REEN BAY FEED COMC SHECK OUPL GIB  REEN BAY FEED COMC SHECK OUPL GIB  PCS-1232	010 SARSO255  REEN BAY COMC <21.5  AREC DUFL 010 SARSO255  REEN BAY COMC <16.1  715-2 8/10/00 SARSC  REEN BAY FEED COMC <16.4  400-1 8/10/00 SARSO255  REEN BAY FEED COMC <18.4  400-1 8/10/00 SARSO255  REEN BAY FEED COMC <18.5  DUFL 010 SARSO255  REEN BAY FEED COMC <15.5  AREC SUPL 010 SARSO255  REEN BAY FEED COMC <15.5  AREC SUPL 010 SARSO255  REEN BAY FEED COMC <15.5  AREC SUPL 010 SARSO255	010 S4830255   \$4830255  REEN BAY	CID   SARSO255   SARSO255   SARSO255	CID   SARSO255   SARSO255   SARSO255   SARSO255	010 S4830255   S4830255   S4830255   S4830255   S4830255    REEN BAY	SABSO255   SABSO255

DATE: DS DCT D JOS FILE: 90914 EHVIRONMENTAL CHEMISTRY BRANCH - DATA REPORTING SHEET ( PAGE 3 OF 6 ) JOS MUMBER: 0054PO-92310183 RECEIPT DATE: 21 AUG C JON DESCRIPTION: GREEN BAY - OLIN-ESTES COMPLETION DATE: 3 OCT C TIPE OF SAMPLE: BEGINENT CHEM. PRESERVATIVE: 2 COLUMN ..... 1 142 140 141 135 139 ANALYTE ..... 137 PCB-1248 PC8-1754 PCB-1242 UG/KG..... PCB-1016 PC8-1221 PC8-1732 SAMP # DESCRIPTION 3216 <15.9 415.9 415.9 GREEN BAY FEED CONC 415.9 <15.9 90926 1525-2 8/10/00 MRSC DUP! 54830255 54830255 54830255 010 54830255 54830255 54830255 416.1 1 <16.1 1 415.1 2896 1 <16.1 90927 GREEN GAY FEED CONC <16.1 1625-2 8/10/00 DUPS. 54830255 54830255 54830255 54830255 54830255 54830255 OID. 1 415.8 1 2869 <15.8 <15.8 GREEN BAY FEED CONC <15.8 415.8 90928 1715-2 8/10/00 WED DUPL 54830255 54830255 54830255 54830255 54830255 54830255 gto 46.25 <6.25 45.25 45.25 46,25 METHOD BLANK 01 CONC 45,25 SLAGT 1880 CUPL 54830255 54830255 54830255 54830255 54830255 010 54830255 N/A N/A N/A N/A N/A BLAUS TON DI CONC 0.62 MREC 98.6 DUPL. 54831255 54830255 54830255 54830255 010 54830255 54830255 PCB-1221 PCB-1221 PCB-1016 PCS-1016 PCB-1242 FCB-1242 PCB-1232 PCB-1252 PCB-1254 PCB-1254 PCB-1248 FCB-1248

JOB FILE:	90914							DATE:	95 c
		***** E	NVIRONMENTAL	CHEMISTRY BRANCH	DATA REPORTE	NS SHEE	T ( PAGE 4 OF 6	······	
+									
	SCRIPTION: GRES	EN BAT	- OLIM-ESTES				D054PD-92310183 SEDIMENT	COMPLETION DATE:	
	COLUMN		7	8					
	AMALYTE			145	146 DCLBP				
	UG/KG	*****	PP- 1000	Telkyl-S	occur				
SAMP #	DESCRIPTION								
90914	GREEN RAY	DONG	123	107%	1 185%	1			
	1400-1 8/10/00		109.2	126	149	1			
	OVERFLOW	DUPL DID	54830255	54830255	54830255	1			
				4.50000000	W. F. 255.2112				
90915	GREEN BAT	CONC	119	1 93.0%	150X	1			
	1505-1 8/10/00	MEC		i .	1	1			
	GYERFLOW	DUPL	54830255	54830255	54830255	1			
		010	34030033	34030033	1 2 100 101				
90916	GREEN BAY	CONC	113	106%	130%	1			
14114	1525-1 8/10/00	MREC		i	(3)	1			
	OVERFLOW	DUPL DED	54830255	54830255	54830255				
			24120622	3400013	1 3403	350			
90917	GREEN BAY	CONC	66.1	1 106%	112%	1			
1646201	1625-1 8/10/00	MEC		i		1			
	DVERFLOW	DUPL DED	54830255	54830255	54830255				
		440	31031635	1					
90918	GREEN BAT	CONC	106	1 98.33	116X	1			
0331000	1715-1 8/10/00	tasc		1	1	1			
	OVERFLOW:	DUPL	54830255	54830255	54830255	- 1			
		210	2444442	1 resider	1 31000000				
93919	GREEN BAY	CONC	92.9	1 1118	126%	1			
	1600-2 8/10/00	MREC		i	i	i			
	OVERFLOW	DUPL	54830255	54830255	54830255	- 3			
		ura-	34039533	1 240000					
908-1200	PCB-1260				TEIXYL-S 2	,4,5,6-	Tetrachiono-a-xylene	(Surrogate(40-140 W	88
OCT 85	0ecachlorobipă	erry LCS	urregate (60-	150 WS33					

JOS FILE	90914							DATE:	63 CC
		[1	WIRDSHENTAL D	HEMISTRY BRANCH	- DATA REPORTI	NG SHEE	EF ( PAGE 5 OF	·.	
	ESCRIPTION: GREE ESCRIPTION: GREE	# BAT	OLEN-ESTES				0054PD-92310183 SEDIMENT	RECEIPT DATE: COMPLETION DATE:	
	COLUMN		7.	8	9			*	
	ANALYTE			145	346				
	UG/KG		PC8-1260	Telavi-8	OCL/8P				
SAMP #	DESCRIPTION								
90920	GREEN BAY	COMC	113	112%	121%	1			
	1505-2 8/10/00	MEC		1	1	1			
	DVERFLOW	DUPL	54830255	54830255	54830255	- 1			
		-0.0	- success	1 servedies					
90921	GREEN BAT	COAC	158	106X	1 125%	1			
3074	1525-2 8/10/00	MEE	SFE:		i	Ţ.			
	OVERFLOW	DUPL			54830255	1			
		GID	54830255	54830255	1 34039633	1			
90922	GREEN BAY	COMC	105	11100	1 122%	1			
Y-yrca.	1625-2 8/10/00	tage		1	i	i			
	DVERFLOW	DUPL		1	1	1			
		blo	54839255	54830255	54830255	1			
90923	GREEN BAY	DONE	107	1 107%	139%	1			
	1715-2 8/10/00	SELE			1	- 1			
	OVERFLOW	DUFL	54830255	1 54830255	54830255	- 1			
		GIP	34830233	1 resident	1,3103103				
90924	GREEN BAY FEED	CONC	90.6	1 105X	122%	1			
*****	1400-1 8/10/00	1800	111111111111111111111111111111111111111	1		1			
		DUPL	CHARROTT	54830255	54830255	- 1			
		DID	54830255	34030433	34000277				
90925	GREEN BAY FEED	0040	116	102%	104%	1			
AMERICA.	1505-2 8/10/00	SMEC		1	1	1			
		OUPL.	number of the same	ELEGONES.	54830255	- 2			
		010	54830255	54830255	34630633				
959-126	PCS-1269				TEIXTL-S 2	,4,5,6	Tetrachioro-m-xyl	ene(Surrogate(40-140 W	5
GCLBP	Gecach Lorobi ph	eryl(S	urrogate (60-1	50 WS))					
1883		13000							
							*		

DATE: D3 DCI ( JOB FILE: ,90914 RECEIPT DATE: 21 AUG ( JOB HUPBER: 0054PD-92310183 JOB DESCRIPTION: GREEN BAY - DLIN-ESTES TYPE OF SAMPLES SEDIMENT COMPLETION DATE: 3 OCT | CHEM. PRESERVATIVE: . COLUMN ..... T ANALYTE ...... 143 145 166 DOLGP TOURTL-8 UG/KG..... PC8-1260 D. SAMP # DESCRIPTION 120% CREEN BAY FEED CONC 113 116X 90926 1525-2 8/10/00 MRSC DUPL 010 54830255 54830255 54830255 1 110% 120% GREEN BAY FEED CONC 138 1625-2 8/10/00 MIC DUPL 54830255 GID 54830255 \$4830255 CREEN BAY FEED CONC 103 109% 97.8% 90928 1715-2 8/10/00 MREC ptp 54830255 54830255 54630255 74,21 86.3% BLADT HETHOD BLANK DT CONC 46.25 DUPL 1 54830255 54830255 DID 54830255 72.3% 87.2% 81.002 LCS 01 CONC 0.61 TREC 97.2 DUPL 54830255 000 54830255 54830255 TalkYL-8 2,4,5,6-Tetrachloro-m-xylene(Surregate(40-140 WS PCS-1260 PCS-1260 DCLEP Decechiorobiphenyl(Surrogate (60-150 WS))

Jobfile Number: 90914 Project: GREEN BAY - OLIN-ESTES Account Number: 0054PD-92310183 Date Received: 21 AUG 00

Job#	Sample	Tst	Analyte	* REC	♦ SDUPL	RPD	OID
90914	90914	143	PCB-1016 PCB-1260	109.2	44.B 115.6	75.9 5.7 5.7	54830255 54830255 54830255
	90914		TelXYL-S DCLBP	149	119 154	3.3	54830255

Page 1

END OF REPORT

446.11	E1 90929 A								
*****		p	NYIROMENTAL O	HEMISTRY BRANCH	- DATA REPORTIN	SHEET ( PAGE	10/ 91**		******
r.	2/19								
XX					200.00	PBER: 0054P0-923	Santa3	RECEIPT DATE:	21 AUG
	DESCRIPTION: GREE	N BAT	- OLIM-ESTES			MPLE: SEDIMENT		OMPLETION DATE:	
CHEMI	PRESERVATIVE:								
	COLUMN		,	2	3	4	5	6	
	AMALYTE		2	4	3	6	7	8	
	MG/KG		AS	CD	CR	cu	75	*6	
SAMP #	DESCRIPTION								
90929	GREEN BAY	CONC	3.30	0.820	42.3	50.9	\$7.0	1.20	1
,,,,,,	1400-1 8/10/00		93.8	1 95.6	98.6	89.0	102.4	96.0	L
	OVERFLOW	DUPL	3.20	0.800	41.6	1 50.3	56.1	1.18	1
		010	01260270	01260270	01260270	01260270	01260270	04650263	- 1
				HOA AUTH	HEA AUTH	HEA AUTH	HEA AUTH		
****	4455 C11	poer.	3.89	0.869	53.7	1 56.0	64.0	1 1.51	1
90930	GREEN BAY 1505-1 8/10/00	MREC	2,09	0.007		1	1	1	i
	OVERFLON	DUPL		i		Î	1	-	1
		CID	01260270	01260270	01260270	01260270	01260270	G4650263	1
				HTUA AUR	HGA. AUTH	HEA AUTH	FIGA AUTH		
			2.69	1 0,648	37.5	1 49.7	1 48.6	1 1,22	1
90931	GREEN BAY 1525-1 8/10/00	2000	4.00	1 0.040	2000	100000	1	1	i
	OVERFLOW	DUPL		i	i	i	T.	1	1
		010	01260270	01260270	01260270	01260270	01260270	04650263	1
				HGA MUTH	HEA AUTH	HGA. AUTH	HILL ALTH		
90932	GREEN BAY	COAT	3.70	0.960	1 57.6	1 52.5	69.2	1 1.44	1
A0A35	1625-1 B/10/00	TREE		1	100000		10000	1	1
	OVERFLOW	DUPL.		î	i	1	lanese.	- Allesana	1
		CED	01260270	01260270	01260270	01260270	01260270	04650263	
				HTUA AUTH	HIGH AUTH	HEA AUTH	MOA AUTH		
90933	GREEN BAT	COMP	3.50	1 0.840	1 52.9	50.5	61.4	1.21	- 01
A5A27	1715-1 8/10/00	TREC	-		1	i i	1	1	1
	OVERFLOW	DUPL		Accesses	1	Accounts	1	0	1
	GUNNOSTI.	010	01260270	81250270	01260270	01260270	01260270	04650263	1
				HGA AUTH	HEA AUTH	HGA AUTH	HTM AUTH		
mana.	CROS PAR	DOM:	4,90	0.860	1 49.5	53.4	1 61.4	1.36	1
90734	GREW BAY 1400-2 B/10/00			1	i		1		1
	DVERFLOW	DUPL		i	İ	1	1.,,,,,,,,,,		
		010	01200270	01260270	01260270	01260270	01260270	04650263	- 1
				MEA AUTH	HGA. AUTH	*GA AUTH	MGA AUTH		
0.40	Arsonic				co c	edmium			
AS CR	Chronium				00000	spent .			
76	Lead					ercury			

DATE: 14 MAR I JOB FILE: 90929 JOS MUMBER: 0054PO-92310183 RECEIPT DATE: 21 AUG ! JOB DESCRIPTION: GREEN BAY - DLIN-ESTES COMPLETION DATE: 14 MAR / CHEM, PRESERVATIVE: TYPE OF SAMPLE: SECOMENT COLUMN ..... 1 á a ANALYTE ..... 2 D. CN CU PS. HG MG/KG..... AS SAMP # DESCRIPTION 48.2 64.6 1 1.52 0.879 90935 SKEEN BAY CONE 3.50 1505-2 8/10/00 TOTEL CVERTLOW DUPL 01250270 01250270 01260270 04650263 01260270 01260270 DID HIGA AUTH HEA AUTH HGA AUTH HEA AUTH 42.5 54.3 1 1.30 SHEEN BAY CONC 3.09 0.727 42.8 1525-2 8/10/00 TOREC OVERFLOW DUFL 01260270 01260270 04650263 01260270 01260270 GID HGA ALITY HIGH AUTH HOA WITH **HGA AUTH** 1 59.3 52.4 67.0 1.31 CONC 3.89 0.937 ERFEN BAY 90937 83.6 96.0 102.7 1625-2 8/10/00 TREC 90.8 93.8 92.8 3.89 0.937 59.0 52.5 67.8 1.33 OVERFLOW DUPL 01240270 01260270 01260270 01260270 04650263 DED 01268270 BIUA AUTE HCA AUTH HEA AUTH HIGH AUTH 48.4 0.870 90938 GREEN BAY COMC 2.69 0.688 1 43.7 1 38.3 1715-2 8/10/00 MEC **DVERFLOW** CUPL 01260270 01260270 04650263 OID 01260270 01269270 01260270 HGA AUTR HEA AUTH HGA MUTH HOA AUTH GREEN BAY FEED 0.738 44.3 46.5 50.8 1 4,31 90939 CONC 3.29 1400-2 8/10/00 THEC DUPL 01260270 01260270 01260270 01260270 04450263 010 01260270 HOA AUTH FGA AUTH HTUA AUT HGR AUTH 37.7 38.2 41.6 1.00 90941 GREEN BAY FEED CONC 2.70 0.580 1505-2 8/10/00 DEFT 01260270 04650263 01260270 010 01260270 01260270 01264270 REA AUTH HIGH MUTH HEA AUTH HGA AUTH CB Codmium Arsenio 45 CU Copper CR Chromium Lead 160 Mercury 79

DATE: 14 MAR I JOB FILE: 90929 JOB WIPMER: 0054/0-92310183 RECEIPT DATE: 21 AUG I JOB DESCRIPTION: GREEN BAY - DLIN-ESTES COMPLETION DATE: 14 MAR I TYPE OF SAMPLE: SUDIMENT CHEM. PRESERVATIVE: 11 12 10 DOLUMN..... 7 ANALYTE ..... 9 11 13 25 30 PE. MG/KG...... N) RF. AC 234 BA SAMP # DISCRIPTION CONC 0.600 0.400 1115 76.1 16800 90929 GREEN DAY 18.7 94.0 1 101.6 114.0 94.4 84.4 96.8 1400-1 8/10/00 terr DUPL 18.3 0.600 0.400 115 75.4 16900 **OVERFLOW** 01260270 01250271 01260270 01260270 01260270 01260270 010 FGA AUTH **BCA AUTR** 21100 CONC 21.3 0.799 1.0.699 125 90.0 90930 GREEN BAY 1505-1 0/10/00 WHED DUPL **CVERFLOW** 01260270 01260270 01260270 01230271 01250270 01260270 HIGH AUTH HIGH AUTH GREEN BAY 0.498 0.399 94.6 60.7 14700 90931 CONC 15.5 1525-1 8/10/00 MREC OVERFLOW DUPL 01260270 01260270 01260270 01250270 01260270 01230271 610 HIGH AUTH HGA AUTH 18200 0.700 0.500 1 132 55.6 90932 GREEK BAY COSC 10.0 1625-1 8/10/00 DEREC OVERFLOW DUPL 01260270 01230271 010 01260270 01260270 01260270 01260270 HGA: NUTH HGA AUTH 1 125 84.0 18900 SREEN BAY CONC 20.5 0.600 1 0.500 1715-1 8/10/00 MARC OVERFLOW DUPL 01230271 CID 01260270 01250270 01260270 01260270 01260270 HIGH AUTH HGA AUTH 124 85.9 20400 0.800 0.500 CREM BAY CONC 20.7 90934 1400-2 8/10/00 WHEC OVERPLOY DUPL 01250270 01260270 01230271 01280270 01260270 dip 01266270 HEA AUTH HGA MUTH Nickel. 55 Selenium 294 21nc Silver MG Bartum FE Iron

		[	AVISONMENTAL (	CHEMISTRY BRANCH	- DATA REPOR	TENG SH	EET & PAGE	5 07 9 3	•••••	*****
	DESCRIPTION: GRE RESCRIPTION: GRE	YAB W	- OLIN-ESTES			10.000	: 0054PD-99 : SEDIMENT	2510183	RECEIPT DATE: COMPLETION DATE:	
	EDUMM AMALYTE MG/KG		9	8 19 SE	9 11 AS		10 13 2M	11 25 8A	12 30 FE	
SAMP #	DESCRIPTION									
90935	EREEN BAY 1505-2 8/10/00 OVERFLOW	DUPL 010	19,9 01260270 NGA AUTH	0.699	0.500     01260270   HGA AUTH	i	122 01260270	60.2       01260270	01230271	-
90936	OREEN BAT 1525-2 8/10/00 OVERFLOW	SUPL SUPL CONC	17.1 01260270 HGA AUTH	0,498	1 0,498 1 01260270 H2A AUTH	j	103 01260270	71.0 1 1 01260270	17300 	1
90937	GREEN BAY 1625-2 8/10/00 CVERFLOW	MED	20.4	0.797 63.0 0.797 01260270	0.598   95.4   0.598   01260270   HEA AUTH	i	134 94.0 130 01260270	90.0   91.6   89.5   01260270	19800   70.0   19200   01230271	1 1
90935	GREEN BAY 1715-2 8/10/00 OVERFLOW	CONC MREC DUPL DED	15.0 01260270 HGA AUTH	0.498   	0.698       01260270   60A AUTH	į	96.8 01260270	67.0       01260270	15800	1
90939	CREEN BAY FEED 1400-2 B/10/CG	CONC SUREC DUPL OED	18.6 01250270 HGA AUTH	0.599       01260270	0.499     01260270   KGA AUTH	į	107 01260270	77.4       01260270	19300 	1
90940	DREEM BAY FEED 1505-2 8/10/00	COMC SUPL CID	15.2 01260270 80A AUTH	0.600	0.400 	į	80.5 01260270	61.9       01260270	15100 	1
HI AS BA	Mickel Silver Barium				SEE ZH FEE	Selenio Zine Iron	•			

JOB FILE: 90929 DATE: 14 MAR JOB DESCRIPTION: GREEN BAY - OLIN-ESTER JOB MIMBER: 0054P0-92310183 RECEIPT DATE: 21 AUG. CHEM. PRESERVATIVE: TYPE OF SAMPLE: SEDIMENT COMPLETION DATE: 14 HAR COLUMN ..... 7 12 11 15 25 30 ANALYTE ..... 9 10 HS/KS...... 81 SE. AG. ZH BA. FE SAMP # DESCRIPTION 0.400 0.300 77.8 50.6 12500 90941 GREEN BAY FEED CONC 13.9 1525-2 8/10/00 10REC DUPL 010 01260270 01288270 01250270 01260270 01260270 01230271 FGA AUTH NGA AUTH 84.5 57.1 12500 90942 0.399 0.399 GREEN BAY FEED COMC 13.6 1625-2 8/10/00 MARKE DUPL 01260270 01260270 01266270 01260270 01260270 01230271 010 FOA AUTH HGA AUTH 0.300 76.3 56.0 13500 90943 GREEN BAY FEED COMC 13.7 0,400 1715-2 8/10/00 MREC DUPL 010 01260270 01260270 01260270 01260270 01260270 01230271 FOA AUTH HGA AUTH HETHOD BLANK DT CONC <0.200 40,100 41.00 40.100 <1.50 BL#G1 <0.100 **XXEC** DUPL 01260270 01260270 01260270 01230271 01260270 01260270 OID FOA AUTH HGA AUTH 4.80 1 42.5 50.6 1 110 COMC 20.3 4.00 81,402 LCS 01 MREC 101.5 79.8 95.0 85.0 101.2 110.0 Mart. 01260270 01260270 01260270 01260270 01260270 01230271 010 HGA AUTH HGA AUTH BL#03 EXTERNAL QC 01 DONE 1,39 4.48 285 194 19600 town. DUPL 01260270 01250270 61230271 010 01260270 01260270 01260270 HGA AUTH HGA MUTH Selentum Nickel. 68 A5 214 Zine Barriun. FE Iren BA

	E <sub>1</sub> 90929								14 MA
			INVIRONMENTAL	CHEMISTRY RRANCH	- DATA REPO	RTINS SHEE	T ( PAGE 7 OF	9 ) ***********************************	******
	DESCRIPTION: GRE RESERVATIVE:	EN GAY	· OLIN-ESTES				0054P0-92310183 SEGIMENT	RECEIPT DATE: COMPLETION DATE:	
	CDUMN		13	14	15				
	HO/KE			32 MV	35 MG				
				100	31110				
SAMP II	DESCRIPTION								
90929	GREEN BAY		20300	410	0.400	1			
	1400-1 8/10/00 DVERFLOW		94.8	99.8	0.400	1			
	DELKTEDE		01230271	01230271	01230270	- 1			
90930	GREEN MAY		19000	433	0.499	1			
	1505-1 8/10/00			1	1	1			
	OVERFLOW	DUPL	01230271	01230271	01230270	1			
90931	GREEN MAY		17800	304	0.299	1			
	1525-1 8/10/00 OVERFLOW	DUPL				1			
	Deliercon		01230271	01230271	01230270	i			
60635	GREEN BAY 1625-1 8/10/00	TREE	16100	359	0.400	1			
	OVERFLOW	DUPL			4	- 1			
		DID	01230271	01230271	01230270	į			
90933	GREEN BAY	rour	17000	372	1 0,400	30			
A0A33	1715-1 8/10/00	TREE	17400	1 3/4	0.400	i			
	OVERFLOW	DUFL		i	i	. 1			
		DID	01230271	01230271	01230270	1			
90934	GREN BAY	CONC	20000	1.418	0.500	î			
	1400-2 8/10/00			i	1	i			
	WOJERFLOW	DUPL	01230271	01230271	01230270	1			
		un	GIESGEY!	Louisser	, distant				
MG.	Ragnes ium				M4	Митрителя			
MO	Mail ybdemum								

JOB FILE: 90929 DATE: 14 MAR ( ENVIRONMENTAL CHEMISTRY GRANCH - DATA REPORTING SHEET ( PAGE 8 OF 9 ) JOB DESCRIPTION: CREEN BAY - OLIN-ESTES JOB HUMBER: 0054PD-92310183 RECEIPT DATE: 21 AUG 0 CHEM. PRESERVATIVE: COMPLETION DATE: 14 MAR 0 TYPE OF SAMPLE: SEDIMENT 15 ANALYTE..... 31 35 33 MS/KS..... NG PM 100 SAMP # DESCRIPTION RO 90935 CREEN DAY COMC 18900 386 0,400 1505-2 8/10/00 NAEC OVERFLOW OUPL 010 01230271 01230271 01230270 90936 GREEA BAY CO4C 17900 352 0.299 1525-2 8/10/00 TREC OVERFLOW DUPL 010 01230271 01250271 01230270 90937 GREEN BAY COMC 16100 356 0.396 1625-2 8/10/00 TREC 92.0 96.8 103.8 OVERFLOW DUPL 15600 344 0.398 010 01230271 01230271 01239270 90938 GREEN BAY CONC 14300 0.399 1: 1715-2 8/10/00 TOREC OVERFLOW DUPL 010 01230271 01230271 01230270 CREEN BAY FEED COMC 18900 376 1.0,499 1 1408-2 8/10/00 MEC DUPL 010 01230271 01230271 01230270 90040 GREEN BAY FEED CONC 16100 270 0.400 12 1505-2 8/10/00 twee DUPL 010 01230271 01230270 01230271 24 **Magnesium** Manganese MO: **Rollybolimum** 

JOE F31,	8: 90929							DATE:	14 (6)
•••••			NVIRONMENTAL O	CHEMISTRY BRANCH	- DATA REPOR	TING SHEE	ET ( PAGE 9 DF 9	,	•••••
	DESCRIPTION: GRE	DA BAY	· DLEN-ESTES				0056PD-92510183	RECEIPT DATE:	
DIEN, P	RESERVATIVE:				TAPE OF	SAMPLE	SEDIMENT	COMPLETION DATE:	14 10
	EGI,1994			14	15				
	ANALYTE			32 MN	33				
	MG/KG		me .		MG				
SAMP #	DESCRIPTION								
90941	GREEN BAY FEED	DONG	15900	260	0.300	1.1			
	1525-2 8/10/00	XXEC		i	i	i			
		DUPL		1	Homeson	1			
		010	01230271	01230271	61236276	1			
90942	GREEN BAT FEED	DONE	12400	253	0.299	1.			
PEPTE	1625-2 8/10/00	TREC	15466	1	1	- 1			
		DUPL	0.2222		1	1			
		010	01230271	01230271	01230270	1			
90943	GREEN DAY FEED	CUMP	12700	228	1 0.300	7			
	1715-2 8/10/00	TREE			1	î			
		DUPL		1	1	İ			
		010	91230271	01230271	01230270	1.			
BL#01	METHOD BLANK 01	COMC	<10.0	<0.100	+0.100	1			
1000		TARC		i	100000	i			
		BLPL CID	01230271	01230271	01230270	1			
		200	JIESEI I	Lateneri	i niesderu	1.			
BL#02	LCS 01	CONC	N/A	20.4	1 N/A	T:			
		TREC		102.0	1	1			
		DUPL	Augusta (		1	1			
		DED	01230271	01230271	[ 01230270	1			
81,403	EXTERNAL QC 01	CONC	6670	495	0.496	11			
		TREC		0	Ţ	1			
		DUPL.	01280221	0127777	1 01710715	1			
		015	01230271	01230271	01230270	1			
MG	Hagnesium				HN H	lunganese			
MD	Holybderun								
				**					

FILE: 91.744 A DATE: 07 SEP ENVIRONMENTAL CHEMISTRY BRANCH - DATA REPORTERS SHEET ( PAGE 1 OF 3 ) JOB DESCRIPTION: EREEN BAY - OLIN-ESTES JOB HUMBER: 0054FD-92310183 RECEIPT DATE: 21 AUG CHEM. PRESERVATIVE: TYPE OF SMAPLE: SEDIMENT COMPLETION DATE: 7 SEP COLUMN...... 1 ANALYTE..... 86 95 100 104 ME/XX ..... 100 TVS 280 TRPE SAMP # DESCRIPTION 90944 GREEN BAY COMC 57100 1 240 200 1400-1 8/10/00 MARC 88.1 85.8 OVERFLOW DUPI, 39600 oto 60790249 10150235 55990240 55990242 90945 GREEN DAY CONC 50500 1 44 310 230 1505-1 8/10/00 AREC DVERFLOW DUFT. 010 60790249 10150235 55990248 55990242 90966 GREEN BAT CONC 42100 | 450 330 1525-1 8/10/00 1361 OVERFLOW DUPL GID 60790249 10150235 1 35990240 55990262 CREEN BAY DONE 50300 530 420 1625-1 8/10/00 MREC CHERFLOW DUPL 010 1 10150235 55990240 55990242 93948 GREEN BAY CCAC 39400 1 44 570 650 1715-1 8/10/00 TREC OVERFLOW DUPL 010 60790249 10150235 559993340 55990262 90949 GREEN BAY 00MC 51200 17 104 360 290 1400-1 8/10/00 TOREC OVERFLOW DUPL 010 60790049 10150235 55990240 55990242 Total Organic Carbon roc TVS Fotal Voluntile Splids 080 Gil and Crease Total Recoverable Petroleum Sydrocarbona TRPH

						*	
109 8116	Et 90944 -						DATE: 07
*******			ENVIRONMENTAL	CHEMISTRY BRANCH	- DAYA REPORTE	ING SHEET ( PAGE 2 OF	5.) ************************************
Canadia	erminerous co						
	MESCREPTION: GA	EES BAY	- DLIM-ESTES			SAMPLE: SEDIMENT	MECETAL DELET ST
	COLUMN			2	3	4	87
	ANN YIE.			95	103	104	
	NG/05		TOC	TVS	080	тари	
SIMP #	DESCRIPTION						*
90950	GREEK BAY	DONE	52500	1 44	1 520	1912	
	1505-2 8/10/00	THEC		1	1 320	1 410	
	OVERFLOW	DUPL		1	1		
		OID	931,8357.8	10150233	55990240	55990242	
90951	GREEN BAY		10111				
****	1525-2 8/10/00		48600	44	420	320	*
	DVBRFLOW	DUPL		1	1		250
			60790249	10150235	55990246	55990242	-
2000	0.800.600						
80952	GREEN BAY		46300	46	590	1 450	
	1625-2 8/10/00	MAEC		1	1		
	OVERFLOW	DUF.		1	1	1	
		oto	6/1790249	10150235	55990240	55990242	
90953	GREEN RAY	CONC	46830	† 44	1 360	1 280 1	
	1715-2 8/10/00	taec		1	1		
	OVERFLOW	DUPL		Transcens 2	1	3 i -	
		010	60790269	10150235	55990240	55990342	
92954	GREEN MAY FEED	CONT	43000	1 44	1 340	1 260 1	
	1400-2 8/10/00	TRIEC		1	1		
		QUPL.		i	i .	1 E	
		010	60790249	10150235	55990240	55990242	
90955	GREEN BAT FEED	CONC	20600	1 =5	1.950	(Case)	
	1905-2 8/10/00	MREC	00000	100	250	180	
		DUFL		i		1	
			60790249	10150235	55990240	55990242	
106	Total Organic C	arbon			tvs fot	at Matasti . a	
	Oil and Grease	12/10				al Volatile Solick al Recoverable Petroleum :	and a second second

	LE: 50944 .							1A1E: 07 S
*****	***************************************		ENVIRONMENTA	IL CHEMISTRY BRANE	CH - DATA REPORT	That suger / mare	3 OF 3 3 ********	meter (b) Si
					100		30 11	************
CHEA,	DESCRIPTION: 5 PRESCRUATIVE:			5	JOB TYPE OF	HUMBER: 0054PD-923 SAMPLE: SEDIMENT		PT DATE: 21 AL
	COLUMN.		. 1	2	3	٠,		-
	MALTTE Ma/kg	*****	. B6	95	100	104		
		******	FUC	TVS	oaq	TRPH		
SAMP #	DESCRIPTION							
90956	DREEW BAY FEED	CONC	22700	1 4	1 460	17.22		
	1525-2 8/10/00			1	1	360	1	
		DUFF		1	i	i	1	
		413	60790249	10150235	55990248	55990242	i	
90957	GREEN MAY FEED	COVC	20700	1 46	F-50			
	1625-2 8/10/00	MREC	201,000	1	360	1 580	1	
		DUPL	Summer of the same	i	i i	i		
		QID.	60792249	10150235	55990250	59990242	-	
90958	GREEN BAY FEED	TONE	27400	1.4				
	1715-2 8/10/00	SEE	67400	1 44	330	270		
		DUPL		1 44		1		
		019	60790249	10150235	55990248	55990242		
8L#01	METHOD BLANK GO	CONC	<100	1 44	1 45	25		- 12
		TOTAL		1	1 33	1 45		7 76
		DUPL	60790249		İ	i i		
			GOLASSEA.	10150235	55990240	55990242		
ALADZ	LCS DI	CONC	11400	N/A				
		truc		170	87.6	879 88.2		
		DLPL		i	1	1		
		019	60790349	10150235	55990248	55990242		
BL#03	ENTERNAL OC OT	SOAC ;	26600	1 N/A	t-march	- Western Comment		
		TREE		N/A	M/A	1 e/v 1		
		DUPL		1	i	1 1		
		010 6	10790249	10150235	35990240	55990242		
foc	Total Organic Co	irten			TIME			
08G	Oil and Grawse				TVS Tota	C Volatile Solids		
					1900	l Recoverable Petro	con hydratarbons	
					23			

Jobfile Number: 90944
Project: GREEN BAY - OLIN-ESTES
Account Number: 0054PD-92310183
Date Received: 21 AUG 00

Job#	Sample	Tst	Analyte	* REC	% SDUPL	RPD	OID
	90944 90944			88,1 85.8	93.7 91.6	6.2	55990240 55990242

Page 1

END OF REPORT

						AG SPEET ( PAGE 1			
	DESCRIPTION: GRE RESERVATIVE:	EN BAY	MOBILE HYDRO	CYCLONE-ESTES-OLTÀ	100000000000000000000000000000000000000	UMBER: NEED PREG AMPLE: SEDIMENT	e	RECEIPT DATE:	
	ANALYTE MS/KS			2 138 PCB-1221	3 139 PCB-1232	4 140 PCB-1242	5 141 PGB-1248	6 142 PCH-1254	
SAMP #	DESCRIPTION								
92099	GB-METIPRO UNDER-1	CONT TRUE DUPL	<7.96	1 <7.95	<7.96	1657	<7.95 	147,96	1
		GID	54920341	54920341	54920341	\$4920341	54922341	54920341	i
92100	GO/HETPRO LHOER-2	TREE	45,18	<8.18 	<8,18 	] 1634 	1 <8.18	] <5.15 ]	1
		DOE!	54920341	34920341	54920341	54920341	54920341	54920541	1
92101	GB/HETPRD OVER-1	terc	-8.29	<8.29	48.29	8812 	<8.29	<4.29	1
		OID	54920341	54920341	54920341	54920341	54920341	54920541	1
92102	GB/HETPRO GVER-2	tate	18.32	1 48.32	<8.52	1 8101	<8.32 	<8.32   ·	1
		010	54920341	54920341	54920341	54920341	54920341	54920341	1
SL#31	METHOD BLANK 01	SAEC	<8.3	1 <8.3	   4.3	1 <8.3	<0.3 	<8.3	1
		DUPL DID	54920341	54920341	54920341	54920541	56920341	54920341	1
01.405	LCS D1		102.0	N/A 	N/A	] N/A	1 A/A	1 */*	1
			1.63 54920341	54920341	54920541	54920343	54920341	54920341	-
PC8-1252	PC8-1016 PC8-1232 PC8-1248				PCB-1221 PCB PCR-1252 PCB PCB-1254 PCB	5-1242			

708 FILE: 92099 DATE: 18 DEC ENVIRONMENTAL CHEMISTRY BRANCH - GATA REPORTING SHEET ( PAGE 2 OF 2 ) JOS DESCRIPTION: CRIEN BAY MOBILE SYDNOCYCLONE-ESTES-OLIW JOS AUMBERT HEED PESC RECEIPT DATE: 01 NOV CHEM, PRESERVATIVE: TIPE OF SAMPLES SEDIMENT COMPLETION DATE: 18 DEC COLUMN...... 7 ANALYTE..... 143 145 160 ME/KE..... PC8-1260 TOURTL-S DELEP SAMP # BESCRIPTION 92099 GS-METPRO COMC 94.9 72.1% | 80.1% MREC DUPL 010 54920341 54920341 54920341 92100 GB/METPRO ODNC 87.2 72.3% 78.6% UNDER-2 TAREC DUPL 010 54920341 54920341 \$4920341 92101 **CB/METPRO** CONC 526 69.43 75.6% OVER-1 trec DUPL 010 54920341 \$4920341 54920341 92102 CS/METPRO CONC APO 66.5% 75.9% OVER-2 MRED DUPL 010 54920341 54920341 54920341 METHOD BLANK 01 DONG 48.3 73.0X 1 125% DARK DUPL 010 54920341 54920341 54920341 LES Of DONC 1.62 67.9% 78.4% **TREC 97.6** 1 85.6 87.2 DUPL 1-65 DID 54920341 54920341 PCS-1260 PCS-1260 Televi-5 2,6,5,6-Tetrachlord-W-xylene(Surrogate(40-140 WS DCLBP Becachlorobiphonyl(Surrogate (40-140 WS))

Jobfile Number: 92099
Project: GREEN BAY MOBILE HYDROCYCLONE-ESTES-OLIN
Account Number: NEED PR&C
Date Received: 01 NOV 00

Job#	Sample	Tst	Analyte	% REC		SDUPL	RPD	OID
							********	
92099	BL#02	137	PCB-1016	102.0	97	7.6	4.4	54920341
92099	BL#02	143	PCB-1260	97.0	98	3.0	1.0	54920341

Page 1

END OF REPORT

56 DATE: 11 DEC / JOS FILE: 92103 ENVIRONMENTAL CHEMISINY BRANCE - DATA REPORTING SHEET ( PAGE 1 OF 2 ) JOH WUMBER: NEED PASC RECEIPT DATE: OR NOV I JOS DESCRIPTION: DIEEN BAY MOBILE HYDROCYCLONE-ESTES-OLIN' COMPLETION DATE: 11 DEC E TYPE OF SAMPLE: SUDIMENT CHEM. PRESCRIMITIVE: COLUMN ..... 1 AMALYTE ..... 86 102 104 086 TRPH MG/KG..... 100 R SAMP # DESCRIPTION 1 120 1 210 GB/METPRO EGAE 14800 92155 UNDER-1 DUPL 10400 55990346 DID 60040311 55990346 1 110 CB/METPRO DOMC 8500 200 92104 MACC UNDER-2 DUP. 60040311 55990346 55990346 grp 390 630 GS/HETPRO 92105 CONC 70300 OVER-1 DUPL 55990346 010 60040311 55990346 350 GB/WETPRO CONC 41000 570 SHEC OVER-2 DUPL GED 60040311 55990346 55990346 <35 1 <35 HETHOD BLANK DT COME 4100 BLWOT TREC QUPL 010 60040311 55990346 55990346 875 LCS 01 CONC 11500 878 88.1 \$7.6 MREC 115.0 DUPL 015 60040311 55990346 55990344 040 Oil and Green Total Organic Carbon 301 Total Recoverable Petrolous Hydrocarbons

DATE: 11 DEC ( JOB FILE: 92103 SHYTROMMENTAL CHOMISTRY BRANCH - DATA REPORTING SHEET ( PAGE 2 DF 2 ) JOB MUMBER: MEED PREC RECEIPT DATE: 01 NOV 4 JOS DESCRIPTION: GREEN BAY MOBILE HYDROCYCLONE-ESTES-CLIN COMPLETION DATE: 11 DEC 1 TYPE OF SAMPLE: SEDIMENT CHEM. PRESERVATIVE: 3 COLUMN ..... 1 104 100 ANN, YTE...... 86 TRPR MS/KS..... TOC 086 SAMP # DESCRIPTION 1 H/A EXTERNAL OC 01 COSC 245 I N/A TARC 108.9 DUPL 55990346 55990346 010 60040511 Dil and Greate Total Organic Carbon 080 TDC Total Recoverable Petroleum Hydrocarbona TRPR

Jobfile Number: 92103
Project: GREEN BAY MOBILE HYDROCYCLONE-ESTES-OLIN
Account Number: NEED PR&C
Date Received: 01 NOV 00

Job#	Sample	Tst	Analyte	*	REC	*	SDUPL	RPD	OID
92103	BL#02	100	O&G	8	8.1	В	8.6	0.6	55990346
92103	BL#02	1.04	TRPH	8	7.6	8	7.8	0.2	55990346

Page 1 END OF REPORT

•••••			EMYEROMACHTA	L CHEMISTRY BRANCS	- DAZA MEPORTI	NG SHEET & PAGE	1 af 6 3		18 JAN
	OFFICE IDT 104 - COL	TH 244	****	CCYCLOME-ESTES-DLTM				+	
CHEM. P	RESERVATIVE:	en ani	MARLE BIOK	OUTGOING - ESTES-DUT		UMBER: WEED PRAC AMPLE: SEDIMENT		RECEIPT DATE: COMPLETION DATE:	
	COLUMN			2	3	4	3	6	
	MG/KG		A CONTRACTOR OF THE PARTY OF TH	4	5	6	7	8	
	may house.		M3	Ca	CR.	ch	79	MG	
5,000 8	DESCRIPTION								8
92107	CB/METPRO	COND	<3.0	1 0,24 4	1 13.6	1 13.4	1 18.6	1 0 101	100
	LNDER-1		101.0	96.4	95.5	1 99.0	86.0	1 100.4	
		DUPL	0.78 1	0.23 a	1 15.5	13.9	1 18.9	0.398	- 1
		010	00001008	00001008	00001008	00001008	1 00001008	04650327	- 1
				HEA AUTH	HEA AUTH	NEA AUTS	HILA AUTH	1 0000000	1.
92108	GB/METPRO	COMC	0.69 J	1 0.20 1	1.11.9	1 13.1	1 18.4	1 0,390	41
	UNDER-2	MEC		1		1	1	1	1
		DUPL 010	00001008			1	1	1	i
		019	90001003	ACA AUTH	HGA AUTA	HGA AUTH	80001008 8GA AUTH	04650327	1
92100	GR/HETPING	COME	7.1	1 2.07	1 112	120	1 149		
	GYER-1	MEC		10000	1	1	1 100	1 4.98	- 13
		DUPE.		Description	1		i	î	
		GCD	00001008	HIGA AUTH	HGA AUTH	HGA AUTH	HGA AUTH	04650327	i
92110	CE/METPRO	COAC	6.8	1.95	1 106	1 116	1 140	1 4.34	100
	CVER-2	MEE		1	j	1000	140	4.34	-
	100	ture		1000000	1	12 mms 3	Day Bar	4.44	16
		010	00001008	HOLD AUTH	NGA AUTH	MEA AUTH	HGA AUTH	04650332	į.
84,901	HETHOG BLANK DT	DONG	<3.0 €	1 <0.50	4.0	<2.0	1 4.0	1 <0.040	100
		MEC		1	İ	1	1	10.040	
		DUPL	and the second second	1	1	1		1	1
		010	00001008	BOOTDOS NEA AUTH	HGA AUTH	#GA AUTH	WEA AUTH	04650332	i
91,902	LCS G1	0040	9.39	1 5.15	20.6	1 20.3		LARME	
		MEC			103.0	US 686 611	10.5	95.3	
		DUPL.		The same	i	1	10210	1.000	1
		CED	00001008	HGA AUTH	GOCOTOGS HEA AUTE	HILA AUTH	00001008 HGA AUTH	04656332	i
As	Ansonia				ro tod	rium			
CR:	Chromium				EU Cook				
Pts	Load				II Merc				
						0.70			

1000	0.78000					t <sup>2</sup>			
	E: 92107							BATEs	
*******	***************************************		DATROANDIZA	L CHEMISTRY BRANC	SH - DATA REPOR	RTING SHEET ( PAGE	2 or 6 ) **	***************************************	••••
J08 :	DESCRIPTION: GRE	EN BAY	MOGILE HYDRO	OCYCLONE-ESTES-D,		NUMBER: NEED MAS		RECEIPT DATE:	01
CHEM. P	RESERVATIVE					SAMPLE: SECTMENT		OMPLETION DATE:	18
	AMALYTE			2	3	4	5	6	
	MG/KG		AS	ED	CR .	ou ou	7 24	8 HG	
SAMP #	DESCRIPTION							-	
BL#03	EXTERNAL OC 01	TRIC		33.6	17.6 	96.4	952	0.0546	
		OIB	00001008	00001008 NGA AUTH	00001008 HSA AUTH	00001008 HGA AUTH	BOOFGOOD   HTUB ARK	04650332	
AS	Aczenia			10000000		Cedefus	man much		
CR	Chronium				10.750	Copper			
Pa	Lead					Mercury			
			7.0						
							20		
					3				
			i,						
							92		
			(0)						

JOB FILE: 92107 DATE: 18 JAN ENVERONMENTAL CHEMISTRY BRANCH - DATA REPORTING SHEET ( PAGE 3 OF 6 ) JOB DESCRIPTION: GREEN BAY MOBILE HYDROCYCLONG-ESTED-DLIB JOB MUNDER: MGED PREC RECEIPT DATE: 01 NOV CHEM. PRESSAWATIVE: TYPE OF SAMPLE: SEDIMENT COMPLETION DATE: 18 JAN EDLUM..... 7 10 11 12 ANALITE ..... 9 ta 11 25 30 ME/KG..... \$1 額 AG 2% FE SAMP # **PESCRIPTION** 92107 GR/METRAD CONC 5.4 64.0 1 41.0 32.8 17.8 8 1 4400 MEC 96.0 1 94.0 1 62.6 1 95.8 100.6 DUPL 5.4 46.0 <1.0 34.0 17.7 6 4510 80010000 000 00001008 00001008 00001008 00001008 00001008 HIGH AUTH **RGA AUTH** 92108 GR/HETPED CONC 4.5 44.0 1 <1.0 31.4 16.3 B UNDER-2 3430 MEC DUPS. 010 000011008 00001008 00001008 00001008 00001008 00001008 HGA MUTH **HTUR ADB** 92109 GS/HETPRO COME 32.2 +4.0 1.4 270 149 8 23200 OVER-1 MEC DUPL gtp 00001008 00001008 00001008 00001005 00001008 8000000 HIGH MUTH RGA AUTH 92110 GRUMETRAD COMC 29,5 0.86 4 257 141 8 22300 OVER-2 tage DUPE 00001006 80010000 00001008 00001008 00001008 00001008 HIGH MUTH HGA AUTH BLP01 METHOD BLANE OT COMC 42.0 44.0 41.0 1 +2.0 0.16 4 <24.6 THEC OUPL. GIG 00001008 00001008 00001000 00001008 00001008 80010000 HIGH AUTH HISA MUTH BL#02 LCS 01 CONC 20.8 1 4.7 1 3.42 51.8 51.8 8 110 TREC 94.0 68.4 103.6 103.6 1 110.0 DUP1 010 00001000 00001000 00001008 00001008 000031008 80000000 HGA AUTH HSA AUTH MI Nickel SE Set enium AG Silver 28 2inc Bartier II Iron

JOS PILE: 92107 DATE: 18 JAN SAVIROSMENTAL CHEMISTRY BRANCH - DATA REPORTING SHEET ( PAGE 4 OF ± ) JOB DESCRIPTION: GREEN BAY HOSILE HYGROCYCLONG-ESTES-OLIN JOH HUMBER: NEED PRAC RECEIPT DATE: 91 NOV CHEM, PRESERVATIVE: TYPE OF SAMPLE: SEDIMENT COMPLETION DATE: 18 JAN COLUMN...... 7 10 11 12 ANALYTE..... 9 10 11 13 25 30 MG/KB..... NI \$6 24 EA FE SAMP # DESCRIPTION RC. BL#03 EXTERNAL GC 01 CONC 13.6 45.0 1 0.59 4 272 172 8 18900 TREE DUPL 010 00001008 00001006 00001008 90001008 | 0000100B 0000100B HEA AUTH HEA AUTH Wickel. Setenium MG. Silver 214 Zinc Cartum ft 1 1

JOB 7 ILE: 92107 DATE: 18 JAN ENVIRONMENTAL CHOMESTRY BRANCH - DATA REPORTING SHEET ( PAGE 5 OF 6 ) JOB DESCRIPTION: GREEN BAY MOBILE HYDROCYCLONE-ESTES-CLIN JOS MINGER: MEED PREC RECEIPT DATE: 01 NOV CHEM. PRESERVATIVE: TYPE OF SAMPLE: SEDIMENT COMPLETION DATE: 18 JAN COLUMN ....... 13 14 AMALYTE...... 32 33 MG/60..... MN MO SAMP W DESCRIPTION 92107 GB/METPRO COMC 83.4 0.5+ | UNDER-1 timec 105.0 DUPL 85.3 42.0 00001005 00001008 HGA AUTH 92108 CO/METPRO COMC 78.5 1 <2.0 UNCER-2 TREC DUPL 010 00001008 00001008 **HCA AUTH** 92109 GE/METPEG CONT 251 1.11 4 1-9390 MRED DUPL 010 03001008 00001003 HOA AUTH 92110 GR/METPRO COMC 243 1.17 4 OVER-2 MEC DUPL 00001008 00001008 HEA AUTH MITHOG BLANK OT CONC +0.80 1 42.0 THEC DUPL 010 00001008 00001038 **HEA AUTH** LES OF CONC 21.2 1.3 N/A \*XEC 106.0 DUPL 010 00001006 00001006 HGA AUTH Hanganese MO Hollybdenum

1		140 96	
200 f.t(E: 92107			MFE: 18
	ENVIRGAMENTAL CHEMISTRY BRANCH -	DATA REPORTING SHEET   PAGE 6 0	y 6) ***********************************
JOB DESCRIPTION: DREEN BAY CHEM. PRESERVATIVE:	HOBBLE HYDROCYCLONE-ESTES-OLDH	JOB NUMBER! NEED PRICE TOPE OF SAMPLE! SEDIMENT	RECEIPT DATE: 01:
AWALTTE	32 33		
SAMP # DESCRIPTION			
BLPGS EXTERNAL DC 03 CONC SREC BUPL 010	(CA CAS) # (CASS) (C)	! ! !	
HN Hanganese		NO Holybdenun	
	3+		
		2	
14			
			8
	Ÿ.		000
	1.		
		1.4	

209 11	5LL 161 88111 J2/B/	**** £8VII	IOMENTAL I	CHOMISTRY BRANCH -	MTA REPORTE	NG SHEET ( PAGE 1	OF 2 1 ****		12 000 0
	DESCRIPTION: OREE PRESERVATIVE:	N BAY MOS	ILE HYDROCY	CLONE-ESTES-DLIN		UMBER: NEED PASC AMPLE: WATER		RECEIPT DATE:	
	COLUMN ANALYTE PPB	13	7	2 138 ecs-1221	5 139 PCR-1232	4 140 PCR-1242	5 141 PCB-1248	6 142 PCB-1254	
SAMP A	DESCRIPTION								
92111	EB/METPRO LINCER 1	CONC <0. MARC DUPL	.24	1 <0.24	<0.26	2.65	<0.24 	<0.24	
			920341	54920341	54920341	54900341	54920341	56920341	1
92112	GB/HETPRO OVER 1	DONE 4D SEEC	.24	40.24	<0.24 	0.43	1 =0.26	1 <0.26	i
		010 54	920341	54920341	54920341	54900341	54920341	54920341	i.
81,401	METHOD BLANC 05	1380	.,25	<0.25	1 40.25 ]	<0.25	<0.25 	<0.25	1
		010 54	920341	54920341	54920341	54920341	54920341	54920341	į
81,902	LES 61	CONC 2.	5.8	6/A	I N/A	1 N/A 1	N/A	I N/A	1
		00PL 2.		54920341	54920341	54920341	54920341	54920341	i
PCB-1	016 PCB-1016 232 PCB-1232 248 PCB-1248				PC8-1221 P PC8-1242 P PC8-1234 P	C#-1242			
									- 23

DATE: 12 DEC ( JOB FILE: 92111 ENVIRONMENTAL CHEMISTRY BRANCH - DATA REPORTING SHEET ( PAGE 2 OF 2 3 JOB NUMBER: NEED PRAC RECEIPT DATE: 01 NOV 1 JOS DESCRIPTIONE GREEN BAY MOBILE HYDROCYCLOME-ESTES-OLIN COMPLETION DATE: 12 DEC 4 TIPE OF SAMPLE: WATER CHEM. PRESERVATIVE! 8 COLUMN...... 7 145 146 AMALYTE ..... 143 PP8..... PEB-1260 TelXYL-S DCL8P SAMP # DESCRIPTION 65.3X 56.5% GB/HETPRO COME 0.30 92111 TOREC DUFT. 54920541 DID 54920341 64.0% 67.3% 92112 GB/METPRO COME <0.24 CVER 1 DUPL 54920341 54920341 010 54920541 BLACT PETROD BLANK OT DONG 43.25 77.4% 80.9% tacc DUPL 010 54920341 54920341 54920341 1 73.0X 79.4% 97.5 3203 BLACE LES 01 TREE 87.6 DUPL 2.24 71.2% 84.7% 54920341 54920341 DID 54920341 Tolant-5 2,4,5,6-Tetrachloro-m-xylene(Surrogate(40-140 WS PCB-1260 PCB-1260 OCLAF Decachlorobiphenyl(Surrogate (40-140 MS))

Jobfile Number: 92111
Project: GREEN BAY MOBILE HYDROCYCLONE-ESTES-OLIN
Account Number: NEED PR&C
Date Received: 01 NOV 00

Tobe	Cample	Ter	Analyte	5	DEC		SDUPL	RPD	OID
000#	Sampre	100	amary ce						
92111	BL#02	137	PCB-1016	94	6.8	9	5.6	1.2	54920341
92111	BL#02	143	PCB-1260	8	7.6	8	9.6	2.3	54920341

Page 1

END OF REPORT

1.04	B DESCRIPTION: GREE		HORILE MYDRO	VOLDME-BEIES-OLIN	300.4	UMBER: NEED PERC		RECEIPT DATE:	01 M
	PRESERVATIVE: HACO		MODELLE HILDON	TICLORE ESTES DETA		AMPLE: WATER		PLETION DATE:	
	COLUMN		1	2	3	4	5	6	
	ANALTTE			4 CD	5	e e	P PS	8 HG	
	PPH								
SAMP	# DESCRIPTION								
92113	GS/METPRO	DONC	<0.015	<0.0025	0.014	0.022	0.017	0.00023	1
	UNDER		110.0	102.0	101.0	1 104.0	103.0	103.6	į
			0.0041 4	<0.0025	0.014	0.021	0.018	0.00031	- 1
		ate	60001002	9001002 #GA AUT#	HEA AUTH	HGA ALITH	HEA AUTH	1 0400040	1
92114	GR/METPRO	CONC	<0.015	<0.0025	0.005 4	0.0088 J	0.012	(0,00020	1
	OVER	THEC			1	į.	1	!	1
		DUPL	00001002	1 00001002	90001062	00001002	50001002	04650340	- 1
		uio	COUNTRIE	HGA AUTH	HTUA ADR	HSA AUTH	HCA AUTH	1 310333	•
BLADI	METHOD BLANK DT	DONG	<0.015	40.0025	<8,010	{ <0.010	<0.010	<0.00020	1
		MAKE		1	1	1	1		!
		DUP'L OID	00001002	00001602	00001002	1 00001002	00001002	04650340	- 1
		OLD	0300 1402	HIN ADH	STUA ADR	HEA AUTH	HOA AUTH		
BLACS	LCS 01	COMC	1.09	0.538	1 1.04	1.00	1.07	0.000345	1
			109.0	1 105.0	104.0	100.0	107.0	92,0	- 1
		DLPL 010	00001002	00001002	00001002	00001002	00001002	04650340	i
			1,1000,000	HCA AUTH	HGA AUTH	NGA AUCH	HGA. MUTH	V.A. (1965)	
BL#03	EXTERNAL DC D1	CONC	N/A	H/A	N/A	1 N/A	N/A	0.00043	1
		BROC		1	!	1	10	- 1	1
		DUPL	\$0001000	00001002	00001002	00001002	200010000	04650340	i
		2.0	and the	HEA AUTH	HGA AUTH	MGA AUTH	HOA WOTH		- 1
AS	Arsenic					strium			
CR	Chromium					pper			
76	tead				100 770	sreury			

DATE: 26 JAN I JOS FILE: 92113 ENVIRONMENTAL CHEMISTRY BRANCH - DATA REPORTING SHEET ( PAGE 2 OF 3 ) RECEIPT DATE: D1 NOV 1 JOB DESCRIPTION: GREEN MAY MOBILE HYDROCYCLONE-ESTES-OLIN' JOB NUMBER: NEED PRICE COMPLETION DATE: 26 JAN -TYPE OF SAMPLE: WATER CHEM. PRESERVATIVE: BMGS 12 10 8 COLUMN ..... 7 30 25 11 13 ANALYTE..... 9 10 234 BA. FE PPM...... NS 85 MG SAMP # DESCRIPTION 0.040 0.0518 1 1.15 COMC 0.0044 J <0.020 <0.005 92113 DEL/METPRO 103.0 104.0 105.0 105.0 105.0 INCER TREC 102.0 0.0518 1.20 0.042 MPL 0.0045 4 <0.020 <0.005 00001002 00001002 \$0001002 20010005 00001002 00001002 010 **HGA AUTH** HEA AUTH 0.0422 0.520 0.036 <0.020 <0.005 GB/METPRO CONC <0.010 TOREC OVER DUPL 00001002 00001002 50010002 00001002 500000002 00001002 DID HGA AUTH HIGH AUTH METHOD BLANK 01 CONC <0.010 <0.0025 <0.120 40.020 <0.005 <0.010 BL#01 RAUC DUPL 00001002 00001002 00001002 00001002 00001002 00001002 OLD HEA AUTH HCA AUTH 1 1.11 1.01 6.31 0.204 LCS 01 CONC 1.06 1 1.05 105.0 101.0 111.0 takec 106.0 105.0 102.0 DUPL 00001002 20010002 20010002 00001002 010 500010035 00001002 HEA AUTH RCA AUTH N/A M/A M/A N/A N/A EXTERNAL OC 01 COND W/A Binger. MAFE DUPL. 00001002 100001002 00001002 00001002 00001002 50010000 010 HIGH AUTH HGA AUTH Selenium 52 Mickeli 2N Zine Silver AG. 1 ton PÉ Bactum DA.

JOB BOSCRIPTION: GREEN DAT MODILE PTOROCYCLONG-ESTES-OLIN			6	NVIRONMENTAL	CHEMISTRY BRANCH -	DATA REP	ORTING SKE	ET ( PAGE 3	o/ 3:	,	
### ### ##############################				HOSTLE PYDROX	CYCLONE-ESTES-OLIN				1		
### ### ### ##########################		COLUMN		13	14				+		
### # DESCRIPTION  #### PA DESCRIPTION  ###################################											
92113 GB/HETPRO COMC 0.0369   0.010 J   UNDER		PPH	*****	MN.	MD						
CANDER   C	SAMP #	DESCRIPTION									
DUPL   0.0372     00001002   00001002	92113	GB/HETPRO	CONC	0.0369	0.010 4						
### ##################################		UNDER			1						
92114 GB/METPRD CORC D.G199 D.G033-J D.G03-J D.G03-J D.G03-J D.G03-J D.G03-J D.G03-J D.G03-J D.G03-J D.G03-J D.											
SARC   DUPL   OCO 1002   OCO 10			nin		1 00001005						
DUPL   DID   COCC1002   COCC100	92114	GB/METPRO	CONC	0.0199	0.0035-1						
BLW02   LCS 01   CONC   1.06   M/A     M/A     M/A     M/A		OVER			1						
HGA AUTH  HGA AUTH				00003002	1 00001002	100					
DUPL					1	0					
DLWO2 LCS 01 COMC 1.06   N/A     N/A	BL#01	METHOD BLANK 01		<0.004	<0.010	1					
BL#02 LCS 01 COMC 1.06   N/A     N/A					1						
BL#03 EXTERNAL OC 01 COMC N/A N/A					00001002						
BL#03 EXTERNAL OC 01 COMC N/A N/A   N/A   OD001002   OD	1003-200	100000000			2000						
BL#03 EXTERNAL DC 01 COMC M/A   M/A	BF405	LCS 01			1 4/4						
BL#03 EXTERNAL OC 01 COMC M/A   M/A				100.0							
TAFC DUPL OID 00001002   00081002			010		00001002	Ü					
TAFC DUPL OID 00001002   00081002	B1 #03	EXTERNAL OC 01	CONC	N/A	1 W/A	E					
010 00001002   00001002   HSA AUTH					i	i					
HCA AUTH				22230	1						
MS Molytdanur			CID		00001002						
	HN	Manganese				но	Molytdan	ur.			
								10			

105	7-9-0
JOS FILE:	93019

B-2-7			in.	000	
DAT	6.6	- 5	nr :	P C	5

	DESCRIPTION: GRE	EN BAY	- CLIN-ESTES		10	JOB VLHBER	: 0054PD-9	2310183	RECEIPT DATE:	20 08
CHEM. I	RESERVATIVE				THRE	OF SAMPLE	: SEDIMENT		COMPLETION DATE:	9 #
	COLUMN			2	3		4	5	6	
	AMALYTE			6	5		ń	7	a	
	ME/KG		AS	ED	C#		cu	PI	HS	
SAMP #	DESCRIPTION									
93019	SAND 1 CELL 4	CONC	0.500	0.050	1 3.50	1	3,60	8.10	1 0,040	1
		THE	88.0	94.0	96.2	1	98.2	92.0	99.2	i
		DUPL	0.500	0.050	3.60		5.70	8.30	< 9.040	- i
		010	01261032	01261032	0126103	1 3	01261032	01261032	04651023	i
				HGA AUTH	HEA AUT	DH.	HGA AUTH	HGA AUTH	30000000	7
93020	BAND 2 COLL 4		0.400	0.030	1 2.60	1	16.5	1 3.10	1 <0.040	
		TREE		E	1	1		1	1	- i
		DUPL		I	1	1		1	1	i
		010	01261032	01261032	0126103		01261032	01251032	04651023	i
				HEA AUTH	HEA AUT		HOLA AUTH	WEA AUTH	al.	
93021	SILT/CLAY 1	COMC	5.10	1.41	1 77.6	1	76.8	1 104	3.44	Ĭ
		MEC			1	e and	11.17	1	1 . /	i
		DUPL		2000000	1 0.5 7	A Sale	16:5	112 2	13.45	i
		010	01261032	01261032	0126103	70	11261032	01261052	04651023	- 1
				HEA AUTE	HGA. AUT	н ,	IGA MUTH	HGA AUTH		
23055	SILT/CLAY 2	CONC	5.00	1.30	1 82.3	13	75.7	96.4	1 3,46	1
		tone			1	- 1		1	1	- 1
		DUPL DID	********		1	33 B	5357X374	The second	100000000	- 1
		010	01591025	1 01261032	0126103	7.0	1261032	01261032	04651023	1
				HUN AUTH	HUA ADK		KEA AUTH	HER AUTH		
1,001	HETHOG BLANK DT		<0.200	<0.020	40,100	1.5	0.100	1 +0.100	<0.040	- 1
		DATE		1	1	10		A.	F	- 1
		DUPL			1			A.	1	- 1
		010	01261032	1 61261032 1 61261032	GGA AUT		SED1051	#5A AUTR	04451023	1
5067	144 04									
CHUZ	LCS 01	CONC	0.000000	4.69	18.9	100	0.0	9.70	0.0699	- 1
			87.2	03_8	94.5	1.3	00.0	97.1	93.2	1
		DUPL OID	01261032	1 01261032	1		******	1	E	- 1
		WED	01251032	HGA AUTH	1 01261032 HEA AUTO		1261032 GA AUTH	HOA MUTH	04651023	1
3	Arzenic					material .				
	Chronius				CD	Cadelus				
5	Lead				EU	Enpoer				
100	1000				812	Mercury				

						40			
J08 FIL	E: 93019							***	05
								MATES	09 /63
	•••••		ENVERGAMENTAL	CHEMISTRY BRANC	H - DATA REPOR	RTING SHEET ( PAG	2 OF 6 3	•••••	••••••
900	Accession and the control of the con			9		nema esti a			
CHEN, PI	DESCRIPTION: GRE RESERVATIVE:	EA BAT	- OLIM-ESTES			8 WUMBER: 0054PD-5		BECEIPT DATE:	
					THE G	SAMPLE: SCOTMENT	N.	COMPLETION DATE:	& ttb
	MALYTE			2	3	4	5	6	
	MG/KG			4 C0	CR CR	6 CU	7	6	
					**		***	HG	
SAMP N	DESCRIPTION								3
BL#03	EXTERNAL DC 01		83.5	37.1	1 17.5	92.0	1 1180	1 0.0537	1.
		DLPL			1	10	.!	1	i
		DID	01261032	01261032	01261032	01261032	01241032	04651025	1
				HOA AUTH	MEA AUTH	HSA AUTH	HEA AUTH	Longitudes	
VS.	Arsenic				co	Cachilun			
IR.	Chronium					Expper			
100	Lead				+0	Mercury			
		1570							

JOS FILE: 93019 BATE: OF FEB I JON DESCRIPTION: GREEN BAY - OLIN-ESTES JOB HUMBER: 0054PD-92310183 RECEIPT BATE: 20 DEC | CHEM, PRESURVATIVE: TYPE OF SAMPLET SEDIMENT COMPLETION BATEL 9 FEB 1 CD.UMI...... 7 12 AMALYTE..... 0 13 10 21 25 32 214 BA MI ME/KE..... NI SE AC SAMP # DESCRIPTION 47.7 93019 SAND 1 CELL 4 CONC 1.90 <0.200 0.300 15.2 5.30 87.2 90.5 87.0 106.6 1117.0 38FC 95.8 5.50 15.5 48.7 DUPL 1,90 <0.200 0.200 01261012 01261032 01261032 01261032 01261032 010 01261032 HGA ALTH HCA AUTH HEA AUTH 111.8 3.90 40.8 93820 SAND 2 CELL 4 CONC 2.50 <0.200 1 0.500 TOTEC DUPL 01251032 01261032 01261032 01261032 01261032 01261632 010 HGA MUTH HISA AUTH 102 325 93021 SILT/CLAY 1 CONC 26.6 1,20 0.799 3.11 TOREC 5 12 DUPL /33 1 010 01261032 01261032 01591025 01261032 01261032 01261032 HGA: AUTH HCA. AUTH HEA. NUTH 16 12 294 93022 SILT/CLAY 2 CONT 27.6 1,00 1 1,00 TOREC DUPL 01261032 01261032 01261032 01261052 01261032 DID 01261032 HCA MOTH HEA WITH HGA. AUTH <0.100 METHOD BLANK 01 CONC <0.100 1 40,100 +1.00 <0.100 40.200 TOKET NUM 01261032 01261032 01261032 010 01261032 01261032 01261032 HGA AUTH HGA MUTH HEA WITH BLAG2 LDS D1 DONE 19.4 4.20 4.50 64.6 44.0 19.2 BH.D 96.0 TOWEL 97.0 85.6 1 90.6 19.2 DUPL 01261032 01261032 01261032 01261032 01261032 01261032 010 HGA AUTH HCA AUTH HGA AUTH Michal. 58 Selenium MG SILVET ZN Zine Manganitasi Ratilum

JOB FILE: 93019 DATE: 09 FEB 01 JOB DESCRIPTION: GREEN BAY - OLIN-ESTES JOB NUMBER: 0054PD-92310183 RECEIPT DATE: 20 DEC 00 TYPE OF SAMPLE: SEDIMENT COMPLETION DATE: 9 FEB 01 CHEM. PRESERVATIVE: 11 12 COLUMN..... 7 8 9 10 ANALYTE..... 9 10 11 13 32 MG/KG..... NI SE AG ZN BA MN DESCRIPTION ROW EXTERNAL QC 01 CONC 14.3 1.40 4.09 329 175 533 BL#03 XREC DUPL 010 01261032 01261032 01261032 01261032 01261032 01261032 HGA AUTH HGA AUTH HGA AUTH Nickel SE Selenium AG Silver ZN Zinc Barium Manganese

15L

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208 FILE: 93019
                                                                                  DATE: 09 fes c
JOB DESCRIPTION: GREEN BAY - GLIM-ESTES
                                                JOB NUMBER: 005490-92310163
                                                                           RECEIPT DATE: 20 DEC C
                                              TYPE OF SAMPLE: SEDIMENT
                                                                          COMPLETION DATE: 9 FEB C
CHEM, PRESERVATIVE:
          ASALYTE ..... 33
          HS/KS,..... HC
SARP # DESCRIPTION
                                                                                            RC
93019 SAND 1 CFLL 4 CONC <0.100
                  TREE 98.4
                  DUPL <0.100
                  010 01261032
93020 SAND 2 CELL 4 COAC <0.100
                  TREE
                  DUPL.
                  DED 01261032
93021 BILT/CLAY 1
                  DOM: 0.799
                  MREC
                  DUPL.
                  000 01261032
                  COMC 0.899
95022
    SILT/CLAY 2
                  TRUC
                  DUPL
                  DID 01261032
      METHED BLANK 01 CONC +0.100
                  MEC
                  DUPL.
                  Q1D 01261032
                  DONC 5.00
SLEGZ LCS Q1
                  38EC 100.2
                  DUPL
                  010 01261052
       Wolybdenum
                                                                                           10
```

						16	3			
JOB FILE	1: 93319				×0. 0				DATE:	09 fea C
		Bi	VIRONHEWTAL	CHEMISTRY	BRANCE -	DATA RUPOR	TING SHE	IT ( PAGE 6 OF 6	,	
	+							•		
	RESCRIPTION: GRE RESCRIPTION: GRE	EN BAT -	OLIN-ESTES					0054PD-92310183 SEDIMENT	RECEIPT DATE: COMPLETION DATE:	
	COLUMN AMALYTE MG/KG		33			81		**		
SAP #	DESCRIPTION									K
B) #03	EXTERNAL OC 01	MREC DUPL	0,696							
<b>PIC</b>	Holybdenun									
				100						
								- 7		

			,						
200 200 10	ESCRIPTION: GREE ESCRIVATIVE:	M BAT	- OLIM-ESTES			ABER: 0054PD-92 APLE: SEDIMENT		RECEIPT DATE: COMPLETION DATE:	
	COLUMN		137	2 138 PCB-1221	3 139 PCS-1232	4 140 PCS-1242	5 141 PEB-1248	6 142 PC8-1254	
SAMP #	DESCRIPTION								
93023	SAND 1 CELL 4	20000	<10.3 42.8	<10_3 	1 <10.3	361	<10.3 	<10.3 	
		010	54821012	54921012	54821012	54821012	54821023	54821012	9
93024	SAND 2 CELL 4	COND MREC DUPL	<10.3	<10.3 	1 <10.3	523	<10.3 	1 <10.3	
		010	54821012	54921012	54621012	54821012	54821023	7 54821012	į
93025	SILT/DAY 1	CONC TALEC DUPL	<38.1	<30.1 	38.1	6052	<38+1 	1 438.1	
		010	54821012	54921012	54821012	54621012	54821023	54821012	
93026	SILT/CLAY 2	CONG SUREC DUPL	<39.7	<39,7 	<39.7 	5803	<39.7 	*39.7	
		7.77	54821012	54921012	54821012	54821012	56821023	54821012	
BL#01	HETHEO BLANK OT	DONG SAEC DUPL	<8.33	<8.33 	×6.33	<8,33	<8.35 	=8.33 	
		010	54821012	54921012	54821012	54821012	54821023	54821012	
BFADS	LCS 01	tarc	0.75 87.2	1 N/A	I M/A	X/A 	N/A	5/A 	
		DUPL 010	54821012	1 54921012	54821912	54821012	54821023	54821012	

C161

DATE: 24 JAN JOS FILE: WHIZE JOB DESCRIPTION: GREEN BAY - OLIN-ESTES JOB HUMBER: 0054PD-92310183 RECEIPT DATE: 20 DEC : CHEM, PRESERVATIVE: TYPE OF SAMPLE: SEDIMENT COMPLETION DATE: 24 JAN . COLUMN ..... 7 ANALYTE..... 143 145 146 UE/KS..... PCB-1260 TOTAL -S DCLBP SAMP # DESCRIPTION . 79.4X 88.8% SAND 1 CELL 4 CONC 14.1 THEC 103.6 81.4 84.1 DUPL 010 54821012 54821012 54821012 93024 SAND 2 CELL 4 83.1% 90,12 DREC DUPL 010 54821012 54821012 54821012 CO4C 319 78.3% 89.2% 93025 STLT/CLAY 1 TREE DUPL 010 54821012 54821012 54821012 93026 SILT/CLAY 2 CONC 316 71.8X 84.95 TREE DUPL 010 54821012 54821012 54821012 METHED BLANK O1 CONC <8.33 86.2% 73.7% TREE DUPL 010 54821012 54821012 54821012 puedo uno ot COMC 0.75 87.6% 1 74.9% MREC 90.4 DUPL 010 54621012 54821012 34821012 PCB-1260 PCB-1260 TaiXYL-S 2,4,5,6-Tetrachloro-m-xylenc(Surregate(40-140 WS DCLBP Decachiarobiphenyl(Surrogate (40-140 WS))

Jobfile Number: 93023
Project: GREEN BAY - OLIN-ESTES
Account Number: 0054PD-92310183
Date Received: 20 DEC 00

Job#	Sample	Tet	Analyte	* REC	% SDUPL	RPD	OID
93023	93023	137	PCB-1016	42.8	60.4	34.1	54821012
93023	93023	143	PCB-1260	103.6	100.4	3.1	54821012
93023	93023	145	TclXYL-S	81.4	88.8	8.7	54821012
93023	93023	146	DCLBP	84.1	87.5	4.0	54821012

Page 1

300 FILE: 93027 DATE: 16 JAJ EMPLRONMENTAL CHEMISTRY GRANCE - DATA REPORTING SHEET ( PAGE 1 OF 2 ) JOB DESCRIPTION: GREEN BAY - DLIN-ESTES JOB MUMBER: 0054P0-92516185 RECEIPT DATE: 20 DEC CHEM. PRESERVATIVE: TYPE OF SAMPLE: SEDIMENT COMPLETION DATE: 16 JAN COLUMN...... 1 3 AMALYTE...... 86 100 104 MU/KG..... TOC 080 SAMP # DESCRIPTION SAND 1 EELL 4 DONG 161D 56 1 19 J DESC DUPL 1980 010 60041010 55991614 93000 SAND 2 CELL 4 COMC 1260 30 121 MEC 87.6 03.5 DUPL 010 60041010 1 55991014 55991014 93029 SILT/CLAY 1 DOVE 14200 1 370 1 200 MREC DUPL 010 60041010 55991014 55991014 93030 STAT/CLAY 2 CDNC 25000 580 MEC DUPL 55991014 010 60041010 55991014 BL#01 HETHOD BLANK 01 CONC <100 1 <35 <35 TOREC **DUPL** 010 60041010 55991014 35991014 LCS 01 CONC 11500 883 1 883 \*#EC 115.0 88.6 DUPL. 000 60041010 55991014 100 Total Organic Carbon 084 Dit and Grosse Total Recoverable Petroleum Mydrocarbons TRPH

				44.	e.	
JES FILES	93027			207 040		
						DATE: 1
		EMATROWNED	STAL DEINISTRY SRAN	EN - DATA REPORTING	SHEET ( PAGE 2 OF 2	,
ing be	SCRIPTION- CE	SEM MAY - OLIN-ES				
CHEM, PRE	SERVATIVE:	SEM MAY - OCIM-ES	ires		CR: 0056P9-92310183 LE: SE01HENT	RECEIPT DATE: 2 COMPLETION DATE: 1
	DOLUME	······ †	2	3		
	AKALYTE.	86	100	164		
	May am	100	065	TRPH		
SAMP #	DESCRIPTION					
81.#03	EXTERNAL QC Q1		N/A	J N/A	E.	
	70	TREC 96.7	1			
		010 60041010	55991014	35991014		
	Total Organic	Carbon ble Petroleum Hy		DMG 011 ar	yd Breese	
race.	Total Receiver a	DIS PSCHOLOUGH HY	Grocarbons			
	*					
					21	
				100		53
		,				
		9				

Jobfile Number: 93027

Project: GREEN BAY - OLIN-ESTES Account Number: 0054PD-92310183 Date Received: 20 DEC 00

Job#	Sample	Tat	Analyte	8	REC		SDUPL	RPD	OID
								********	
93027	93028	100	O&G	8	7.6	B 5	9.2	1.8	55991014
93027	93028	104	TRPH	88	8.8	85	9.0	0.2	55991014

Page 1

JOB FILE: 94957 BATE: ST JUN ENVIRORMENTAL CHEMISTRY ARANCH - DATA REPORTING SHEET ( PAGE 1 OF 3 ) JOH DESCRIPTION: GREEN MAY - OLIN-ESTES JOB MUMBER: 005490-92310183 SECRIPT DATE: 16 MAR CHÉM. PRESERVATIVE: TYPE OF SAMPLE: SEDIMENT COMPLETION DATE: 7 JUN AMALYTE..... 2 6 n CB CR. Eu. PB 160 SAMP # DESCRIPTION 94937 CLAY 1 CELL 4 CO4C 6.90 2.29 140 1 118 191 3.30 3/16/01 1860 NO2.0 99.6 79.4 79.6 110.0 SUPL 6.90 2.32 140 118 195 010 01261137 01261137 01261137 01251137 01251137 04651102 HGA. AUTH HEA AUTH HILL ADM HGA. AUTH 94938 CLAY 2 CELL 4 DONE 6.79 2.28 128 1 108 196 2.40 3/16/01 TREE DUPI, 010 01261137 01261137 01261137 01261137 01261137 04651102 HGA AUTH **HOA AUTH** RIUS ADR HEA AUTH 94939 SILT CELL 4 COMC 5:00 0.320 1 15.1 21.2 242 0.363 3/16/01 tage 109.2 **GUPL** 0.371 000 01261137 01261137 1 01261137 01261137 01261137 04651102 HGA AUTH MEA AUTH STUA ADR HGA AUTH METHOD BLANK DI COND 48,200 +0.020 40.100 1 <0.100 40.0100 100EC DUPL 010 01261137 01261137 01261137 01261137 01261137 04651102 BGA, AUTH REA AUTH HEA AUTH HEA AUTH 81,602 LES GT DONC 10.2 51.4 19.1 18.9 9.60 0.0992 MREE 102.0 102.8 95.5 94.5 96.3 99.2 DUPL 010 01261137 01261137 01261137 01261137 01261137 04651102 HEA AUTH NTUA ADB HILM AUTH HEA AUTH SLOGS EXTERNAL OC OL COMC 96.3 1 22.1 101 1090 0.0656 MREC 108.3 DURL 010 01261137 01261137 01261137 01261137 01261137 04651102 MEA AUT & FIGA AUTO HIGH AUTH REA AUTH AS. Accepta CO Cadmium C8 Chronium CU. Copper Seed. HC Mercury

JRS FILE: 94957 DATE: OF JUN JOH DESCRIPTION: GYEEN BAY - OLIN-ESTES JOB WUMBER: 005490-92510185 RECEIPT DATE: 16 MAR CHEM. PRESERVATIVE: TYPE OF SAMPLE: SEDIMENT COMPLETION DATE: 7 JUN OOLUNN...... 7 11 12 ANALYTE..... 9 11 13 24 25 MG/KG..... MI 100 AG 24 SARF # DESCRIPTION 94937 DLAY T CELL 4 CONC 38.7 1 1.30 1,50 1 689 26500 184 3/16/01 TREE 57.4 88.2 98.2 79.4 90.8 1110.4 DUPL 38.7 1.30 1.60 592 26400 186 01261137 01261137 01261137 01261137 01231154 01261137 **BEA AUTH** HOA AUTH 94938 CLAY 2 CELL 4 CO4C 35.0 1 1.30 1.60 672 26400 1 182 3/16/01 trec OUPL. dt0 01261137 01261137 01261137 01261137 01231154 01261137 HGA AUTH BEA MITH 94939 STLT COLL & COME. 7.00 0.300 0.400 350 1940 27.5 3/16/01 MAEC DUPL. 010 01261137 01261137 01261137 01261137 01231154 01261137 REA AUTH HGA AUTA 81,601 HETHOD BLANK OT COME 40,100 40.200 40,100 1.1.20 42.00 40,100 DUPL dtb 01261137 01261137 01261137 01261137 01231154 01261137 HGA. MUTH BUF02 LCS 01 DOM: 18.3 1 4,30 4-60 45.7 N/A 53.4 THEC 91.5 86.8 95.0 91.4 106.8 DUPL 010 01261137 01261137 01261137 01261137 01231154 01261137 **BEA AUTH** HGA AUTH EXTERNAL OC GT CONC 1.60 4.79 331 33000 216 TREC DUPL 01261137 010 01261137 01261137 01261137 61231154 01261137 **BEAL WORK** BEA AUTH MI Wickel 22 Selenium AG. Silver ZA Zine Aluminum Barium

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408 FILL: 95957
                                                                                                    DATE: 07 465
  ENVIRONMENTAL CHEMISTRY BRANCH - DATA REPORTING SHEET ( PAGE 3 DF 3 )
    JOS DESCRIPTION: GREEN DAY - OLIN-ESTES
                                                             JOB NUMBER: 005490-92310183
 CHEM, PRESERVATIVE!
                                                                                             RECEIPT DATE: 16 MAY
                                                         TYPE OF SAMPLE: SEDEMENT
                                                                                         COMPLETION DATE: 7 JUL
              14
                                                       15
              AMALYTE ...... 30
                                          35
                                                        13
              MG/KG..... FE
                                                        Ho
 SAMP # DESCRIPTION
 94937
         CLAY 1 CELL 4
                       COMC 30700
                                         330
                                                      1.00
         3/16/01
                       MREC 93.6
                                          90.6
                                                       114.8
                       DUPL 30400
                                         335
                                                       1.00
                       010 01231154
                                         01261137
                                                      01261137
                                          HIGA AUTH
 94933
         CLAY 2 CELL &
                       COMC 50500
                                         1312
                                                      1 1.00
        3/16/01
                       TREC
                       DOPL.
                       010
                            01231154
                                        01261137
                                                      01261137
                                          HGA AUTH
 94939
        SILT CELL 4
                       DOMC: 10500
                                        1774
                                                      0.500
        3/16/01
                       MEC
                       DUPL
                       010 01231154
                                        01261137
                                                      01261137
                                          HGA MUTH
01,601
        METHOD BLANK 01 COM: <2.00
                                        <0.100
                                                       <9,100
                       tere:
                       DUPL
                      010 01231154
                                         01261137
                                                     01261137
                                         HIGH AUTE
B1//02
        LC$ 01
                      COMC 112
                                        18.7
                                                     N/A
                      WEE 112.0
                                         95.5
                      DUPL
                      010 01231154
                                         01261137
                                                      01261137
                                         HIGH AUTH
        EXTERNAL OC DT CONC 42100
                                                                                                            12
                                         593
                                                     0.999
                      WHEE
                      DUPL
                      018 01231154
                                         01261137
                                                     01261137
                                         HGA AUCK
FE.
        fron
                                                             Munganese
        Mollybdishus
```

DATE: 25 AND	JOS FILE	94940					*		nate-	25 API
CHER_PRESENTING:   TOP SAMPLE   SCHIEST   COMPLETION DATE: 25 M		180								
THE PRESENTING	~ (	1/30/11		ONVIRONMENTAL.	CHEMISTRY BRANCH	- DATA REPORTE	NG SHEET ( PAGE	1 0		******
COLUMN	900.0	ESCRIBITION: PRE	DI BAT	· OLIN-ESTES		208 N	MARKET DOSPAD-AS	310183		
### 137   138   139   140   141   142   ### 145   145   145   145   145   145   ### 145   145   145   145   145   ### 145   145   145   145   ### 145   145   145   145   ### 145   145   ### 145   145   145   ### 145   145   145   ### 145   145   145   ### 145   145   145   ### 145   145   145   ### 145   145   145   ### 145   145   145   ### 145   145   145   ### 145   145   ### 145   145   145   ### 145   145   145   ### 145   145   145   ### 145   145   145   ### 145   145   145   ### 145   145   145   ### 145   145   145   ### 145   145   145   ### 145   145   ### 145   145   145   ### 145   145   145   ### 145   145   145   ### 145   145   145   ### 145   145   145   ### 145   145   145   ### 145   145   145   ### 145   145   145   ### 145   145   ### 145   145   145   ### 145   145   145   ### 145   145   145   ### 145   145   145   ### 145   145   145   ### 145   145   145   ### 145   145   145   ### 145   145   145   ### 145   145   ### 145   145   145   ### 145   145   145   ### 145   145   145   ### 145   145   145   ### 145   145   145   ### 145   145   145   ### 145   145   145   ### 145   145   145   ### 145   145   ### 145   145   145   ### 145   145   145   ### 145   145   145				120	1020					- 1
SAMP # DESCRIPTION				137			325.0			
04940 CLAY 1 CELL 4 CONC										
3/16/01 SREC DUPL   DID SARS1099   SARS1099	SAMP #	DESCRIPTION								
3/16/01 SREC DUPL   DID SARS1099   SARS1099	94940	FLAV 1 FELL A	nose	*KD 5	Leco.s	1 4/0 5	1 4840	1 46 8	1 - 12 1	
DID   SABSTORY   SABSTORY   SABSTORY   SABSTORY   SABSTORY   SABSTORY	140				1	1	0000	1	1 440.5	- 1
94941 CLAY 2 CELL 4 CONC <40.5			DUPL		Barrensen	i	i	i	1	- 1
\$716/91 \$600 \$4831099			DIP	54831099	54831099	54831099	54831099	54831099	54831099	1
SUPL   OLD   S4831099   S483109	94941	CLAY 2 CELL 4	COAC	«LQ.5	<40.5	×40.5	8330	460.5	440.5	6
010 54831099   5483109		3/16/01	0.00 DZ		1	1	1	1	1	1
96942 SILT CELL 4 COMC <11.2   <11.2   1950   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2   <11.2			010	54831099	54831099	54831099	54831099	54831099	1 54831099	
5/16/01 SARC DUPL 01D SARS1099   54831099	20200 0				11202 11202	W. C. E.				
DLPL 01D 54831099   54	96945			<11.2	<11.2	411.2	1950	411.2	<11.2	!
BL#01 METHOD BLANK 01 COMC <8.3		37 107 01	0.07673			1	10			
SREC DUPL 019 5483109				54831099	54831099	54831099	54831099	54831099	1 54831099	i
### DUPL	81.901	PETHOD BLANK OF	CONC	48.3	48.3	1 <8.3	1 <8.3	1 -8.5	1 <0.5	1
010 54831099   5483109			1000000		100000	i	1	1	i	i
PCR-1016 PCR-1016 PCR-1016 PCR-1232 PCR-1232 PCR-1242 PCR-1242 PCR-1242 PCR-1242				54831099	54831099	54831099	54831099	54831099	34831099	1
PCR-1016 PCR-1016 PCR-1016 PCR-1232 PCR-1232 PCR-1242 PCR-1242 PCR-1242 PCR-1242					100	19100001	V 022		93203	115.1
PCR-1016 PCR-1016 PCR-1016 PCR-1232 PCR-1232 PCR-1242 PCR-1242 PCR-1242 PCR-1242	80,402	LCS UT	100		A/A	N/A	N/A	A/A	1 M/A	- 1
PCB-1016 PCB-1016 PCB-1221 PCB-1221 PCB-1222 PCB-1232 PCB-1242 PCB-1242					22	i	1	A constraint	i .	- 1
PC8-1232 PC8-1232 PC8-1232			010	54831099	54831099	\$4831099	54831099	54831099	54831099	1
	PCB-1016	PC8-1016				PEB-1221 PCB	-1221			
PCS-1294 PCS-1294										
	PL8-1248	PG8-1248				PCB-1254 PCB	-1256			
¥										
		ş.								

406 FILE: 94940 GATE: 25 APR 2 INVERDMENTAL CHEMISTRY BRANCH - DATA REPORTING SHEET ( PAGE 2 OF 2 ) JOB DESCRIPTION: GREEN BAY - OLIN-ESTES JUN MUMBER: 005490-92310183 RECEIPT DATE: 16 MAR U CHEM. PRESERVATIVE: COMPLETION DATE: 25 APR 0 TYPE OF SAMPLE: SEDIMENT COLUMN..... 7 ANALYTE..... 143 145 166 UE/KG..... PCB-1260 TelXFL+S BCL SP SAMP # DESCRIPTION RO. 96940 CLAY 1 CELL 4 COMC 240 1144 130% 3/16/01 DIRECT DUPL 010 54851099 54831099 54831099 CLAY 2 CELL 4 COAC 235 116% 1 115% 3/16/01 tetc DUPL 010 34831099 54831099 54831099 94962 SELT COLL 4 COMC 18.2 95.2% 117% 3/16/01 REC DUPL. GID 54831099 54831099 54831099 METHOD BLANK DT CONC 48.3 1 109% 1 127% terc DUPL 010 54831099 54831099 54831099 BL#02 108 01 CD4C 75.3 99,15 114% BREC 90,4 113 DUPL 81.3 010 54831099 54831099 54831099 PCB-1260 PCB-1260 TotXYL-S 2,4,5,6-Tetrachloro-e-xylene(Surrogate(40-140 WS DCLBF Secuchiorobiphenyl (Surrogate (40-140 WS))

Jobfile Number: 94940 Project: GREEN BAY - OLIN-ESTES Account Number: 00549D-92310183 Date Received: 16 MAR 01

Job#	Sample	Tat	Analyte	8	REC	% SDOPL	RPD	OID
0.00	$(0,1) \otimes (0,1) \otimes (0,1) \otimes (0,1)$							
94940	BL#02	137	PCB-1016	93	1.2	103.2	10.2	54831099
94940	BL#02	143	PCB-1260	90	1.4	97.6	7.7	54831099

Page 1

/02 FIL	f: 94943				+ 1				04	ATE: 30 A
(IC)	1/25/04	•••••	ENVIRONMENTAL (	CHEMISTRY BRANCH	- DATA REPORT	FING :	SHEET ( PAGE 1	0F 13	•••••	
	DESCRIPTION: GRE RESERVATIVE:	EN BAY	· OLIN-ESTES				R: 005490-92310 E: SEDIMENT	0183	RECEIPT OF	
	COLUMN		1	2 .	3					
	ANALYTE			100	104		900			
	*c/cc		100	DBG	TRPH		069-88			
SAMP #	DESCRIPTION									
94943	CLAY 1 CELL 4	DONG	81000	540	230	#1	390			
	3/16/01	MREC		1	1					
			82500	1	1	1	Lance H			
		DIE	60041117	55991107	55991110		55991110			
94944	DLAY 2 CELL 4	COAC	76800	460	1 130	411	250			
	3/16/01	TARE		Î	1					
		DUPL	60041117	55991107	55991110	1	55991110			
94945	SILT CILL 4	CONC	9180	500	1 45	#1]	110			
	3/14/01	MEC		13.00	1	1	i			
		DUPL	69041117	55991107	   55991110	ŀ	55991110			
		orogitis	100000000000000000000000000000000000000	NOT THE STATE OF		,	- FEEDON - 14			
BLADS	HETHOD BLANE 01		<700	<35	-35	#1	435			
		DUPL		13	1					
		010	60041117	55991107	55991110	i	55991110			
	Triangle Au			1					- 44	
31,402	LCS 01		112.0	910	927	41	921			
		DUPL	11610	88.9	90.5	1	89.0			
		010	60041117	55991107	55991110	i	55991110			
SL#03	EXTERNAL GC 61	COMC	***	1 404						
24403	minute We of	MEG	3(8	N/A	N/A		N/A			
		DUPL	-		1	i				
		CED	60041117	55991107	55991110	l	55991110			
***	Total Organis 6	arbon			086 0	il an	d Grease			
TOC	Total Recoverab		roteun Hydroca	rborn			Grease (Repeat)			
TRPM										
TRPM FOOTNOTE										

Jobfile Number: 94943

Project: GREEN BAY - OLIN-ESTES Account Number: 00549D-92310183 Date Received: 16 MAR 01

Jobii	Sample	Tst	Analyte	8	REC	- %	SDUPL	RPD	OID
94943	BL#02	104	TRPH	91	0.5	8	7.4	3.5	55991110

Page 1

	Green Bay - Olin-Est	es	Job	File Number.	94943	
	ECB Quality	Assurance Co	orrective Actio	n Form		
Analysis:	O&G, TRPH		Date:	23-April-01		
Analyst:	Harrison		Instrument:	FTIR		
Problem:	Samples extracted 3/ blank and in samples probably from silica	s. TRPH numbers				
Sample Num	ber(s) Affected:	94943-94945				
Recommend	ed Corrective Action:	Pre-clean silica g	el and re-extract sa	mples		
Corrective A	ction Taken By Analyst:		cted 4/18 which was Silica gel pre-cleans		ımple	
Comments	No contamination wi lower than original v between extractions TRPH data ONLY is	ralues. Possibly so . Both original and	ome analyte loss du	e to length of tim	10	
	tower than original v between extractions TRPH data ONLY is two Action/Taken:	ralues. Possibly so . Both original and	ome analyte loss du	e to length of tim	10	

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### REPORT DOCUMENTATION PAGE

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Trudy J. Olin-Estes, Susan E. Bai	ley, David W. Bowman, Denni	5e. TASK NUMBER
		5f. WORK UNIT NUMBER 0054PD
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#### 13. SUPPLEMENTARY NOTES

#### 14. ABSTRACT

A mobile, self-contained, maximum density separator (MDS) was tested in a 1-day demonstration conducted at the Bayport Confined Disposal Facility in Green Bay, WI. The objective of the demonstration was to evaluate the ability of the equipment to separate a sand fraction meeting a given specification with respect to fines content and PCBs concentration. Additionally, two different methods of excavating and preparing the material for processing with the MDS were tested. One phase of an ongoing effort in evaluating the feasibility of soil washing techniques for volume reduction of dredged material, the field demonstration was preceded by bench-scale fractionation studies. These studies were conducted to determine the magnitude and distribution of contaminants in the material to be processed, and expected contaminant levels in the product streams. The demonstration was the culmination of research into the implementation and interpretation of fractionation studies; type, availability, and suitability of off-the-shelf equipment for sediment processing; and site visits to view different physical separation plant configurations. The results of these cumulative efforts will ultimately be incorporated into summary guidance documents.

15. SUBJECT TERMS	Hydro	cyclone	PCB	S	Soil washing	
Dredged material	Maxin	num density separato	r Sedii	ments	Volume reduction	
Fractionation studie	s MDS		Soil	separation		
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